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Computer Weekly

Thursday, December 1, 1983

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GLC puts technology in reach of jobless

by John Kavanagh

UNEMPLOYED Londoners are being brought together with academics to create jobs by exploiting bright ideas. The Greater London Council is putting £4 million into setting up what it calls technology networks to make expertise and equipment at London polytechnics and universities available to "ordinary people".

The project, announced today, is backed by two polytechnics plus researchers at St Thomas' Hospital, Imperial College and City University.

The four technology networks, formed by the GLC's Greater London Enterprise Board, will have shop-like centres where people can go to discuss their own ideas or set up their own businesses using ideas from the centre.

Workshops and second-hand equipment will be available to get ideas to the prototype stage. Network centre staff and academics will provide technical advice.

Existing businesses will also be able to draw on the pool of ideas. Royalties will be re-invested in the networks.

"Enthusiasm among researchers and community groups is such that ideas for the product bank are already piling up, ready to into production as soon as the networks open," said Dr Michael Cooley, director of the Greater London Enterprise Board's technology division.

These ideas include a robot arm, medical expert systems, energy monitoring products and a controlled entry system for flats and old people's housing.

"The response of London's research institutions and their staff to the networks in the preliminary stages has shown the great enthusiasm they have for making their work more relevant to ordinary people," Cooley said.

One in eight of London's workforce is unemployed and there are 33 million square feet of idle factory space in the capital.

WILKINSON . . . "Some users have a cavalier attitude."

DEC aims to put paid to pirates

by John Kavanagh

DIGITAL Equipment is aiming to stamp out software piracy in the UK in a bid to save £10 million per year — 5% of UK turnover.

In response to requests from users and official systems houses for clearer information, the giant US manufacturer is to issue licence certificates with each software product. At the same time it will "look more closely" at deliberate piracy in the UK.

These initiatives are led by Andrew Skinner, who took on the newly-created job of software licensing manager when DEC's copyright lawsuit against systems house Darkcrest got under way at the end of last year.

"We're under pressure as a supplier to keep business simple," he said. "In the wake of the Darkcrest case, people have been asking where their licence is and what it means.

"The conditions are laid out in the contract, but often the people signing the contract are not the users. So we will now issue certificates with the products explaining the terms. We've been through the wording several times to get it as simple as possible. We want customers to feel legally comfortable about using our products."

Skinner said that some piracy took place because users did not understand all the implications of a licence. A user with five computers might get one copy of an operating system update and copy it for the separate processors without realising DEC should be paid for each copy.

But there is also a "tiny minority" of companies which deliberately pirate software products.

"We are extremely concerned about deliberate piracy," Skinner said. "Whenever we come across it we are bound to follow it up, because it is unfair to customers which pay the proper fee."

Arrick Wilkinson, chairman of the DEC users association, was pleased the company was responding to user pressure. "We don't want anyone breaking the law unintentionally," he said. "Some users have been penalised by IBM because they weren't sure what the licensing position was."

But he added, "Some users have a cavalier attitude. And US users are surprised at how law-abiding UK users are."

DEC's moves are supported by customers. Bernard Conlon, marketing director at authorised computer distributor Minicomputer Commercial Software, said: "I hope anyone selling software illegally is put off by this. Piracy by other firms costs us money."

But Conlon pointed out that DEC still had no control over the sale of software by systems houses to users. The user has a contract with the systems house, which has a contract with DEC. "Some users have come unstuck by getting unlicensed software," he said.

SERC turns to CAM

by John Riley

A MAJOR new computer aided manufacturing programme involving industry and universities is to be launched shortly by the Science and Engineering Research Council.

SERC hoped to start the £15 million, five-year applications of Computers to Manufacturing Engineering programme as soon as possible, and was to set up a separate directorate to run it, said Peter Smith, deputy co-ordinator of the SERC Industrial Robotics Initiative, last week.

"We've concentrated on robots until now, but that is only one part of the application of computers to the manufacturing scene," he said. "Now we will be bringing the other areas up to scratch. They will include computer aided engineering, flexible manufacturing systems, factory communications and manufacturing software."

However, a questionmark hangs over the funding. For the new programme Smith wants three times the annual £1.2 million that SERC has available already for its robotics programme. "But in any case," he said, "it will go ahead whether or not we get the money. The money will go primarily to universities, but like the robotics programme, we will have close links with industry."

Earlier this year the Department of Trade and Industry extended its Computer Aided Design and Manufacturing Awareness Programme, adding £10 million to the £6 million three-year allocation that was made in October 1981. It is expected that there will be liaison between the DoTI and the new SERC programme.

Control Data turns banking into a single operation

by Dave Madden

CONTROL Data has consolidated its banking systems and service arms outside the US into a single organisation in an effort to increase its penetration of the international banking market.

The new operation, called Financial Information Services, brings together DEC OEM and banking systems house Arbat, and Control Data's own Business Information Services unit. It will be based in London, and Jeff Harris, managing director of Arbat, will head the division.

"When Control Data bought Arbat in March this year, the obvious question was what would they do with it. Well, Financial Information Services is the answer," said Harris.

According to one spokesman, Financial Information Services "will give Arbat more confidence and credibility in the international banking and financial world".

Control Data vice-president of services, George Hubbs, described the move as "a reaffirmation of our commitment to the financial market place" made in March, and it confirms the company's stated intention of using Arbat to learn how to do business in vertical markets.

The announcement removes any doubts that Control Data might treat Arbat as a short term investment.

In affect, Financial Information Services merges Arbat's real time banking systems — the Series 700 running on DEC Vax and PDP-11 machines — and its Gateway and Intelex systems — with Control Data's bureau network of management support services running on IBM hardware.

Arbat claims that the technical links between its systems and service network already exist. The first spending product Financial Information Services will offer is a global risk control system [illegible]

Harris said that Arbat had had a good six months since acquisition and he is looking for turnover of $30 million this year. Business Information Services will go close to $30 million outside the US too.

Arbat now has 100 major clients.

Business Information Services (BIS) was the name given to the bureau company bought by Control Data from IBM in 1973 — although CDC did not advertise the fact in the UK because of confusion with BIS Applied Systems.

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PICKETT . . . "We're talking about a fixed-price job."

Doubt falls on Ada research

by George Black

THE future of UK research into Ada — likely to be the real time language of the next decade — is in doubt, after the government and British Telecom pulled out of a major project.

The stumbling block was that BT and the Ministries of Defence, and Trade and Industry wanted a fixed-price contract, while the consortium of developers, Ada Group Ltd, seems to have insisted on being given a cost-plus contract.

Talks between the two sides have been going on all year, but now BT says it is getting nowhere and will look elsewhere for help.

However, Ada expertise in this country is limited, and the Ada Group members, ICL, SDL, SPL and Software Sciences, hold much of it.

The scheme that has been dropped was a £9 million Chill and Ada programming support environment ("Chapse") to be created over 4½ years. Recommended both by an official government report and by NEDO, it involved putting the US Defence Department's Ada language and BT's language, Chill, on to ICL 2900 and DEC Vax machines. A compiler was due to be written by 1985, with the whole job to be completed two years later.

The project consisted of a minimal Chapse (MChapse) being undertaken by Ada Group, and a set of tools being written by the CAP-headed Augusta Consortium.

Now Augusta is hoping that the MChapse part will be put out to tender again, so it can bid for the work.

Meanwhile Augusta's technical representative, Michael Pickett, was hopeful that its own part could still go ahead.

"Originally our spec was on a time and materials basis, but now we're talking to the MoD about a fixed-price job," said Pickett.

Another possibility now is that the Chill and Ada elements of the work could be split up, with BT and the ministries taking a different view of the funding arrangements.

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Computer Weekly

Thursday, December 8, 1983 Number 890 35p

Alvey issues new software strategy

by George Black

AN Information Systems Factory by 1989 is the key element of the Alvey software engineering strategy, which is published this week.

The strategy rests on the argument that market conditions will be more significant than technical excellence. The emphasis of the paper, published by the Alvey software director David Talbot, is on improving the country's balance of payments by developing tools to help programmers. Software engineering is one of the four areas selected by Alvey for development efforts. The others are VLSI, man-machine interface and knowledge based systems.

Talbot says the Alvey objective should be to create an infrastructure for software to support British industry in the same way as Japanese steel underpinned the commercial success of Japanese manufacturers in the 1950s and 1960s.

If the attempt comes off, 1989 should see Britain in possession of an integrated project support environment (IPSE). This has been defined as a set of specification, design, programming, building and testing tools that make up a language-independent development methodology. The tools should use the same project database and be governed by management control tools throughout the software life cycle.

The Unix environment will be evolved, but there will also be a "clean-sheet, non-Unix" attack, Talbot promises. The proposal is not seeking to establish Unix as its long-term strategy, and speaks of a "need to protect against an undue dependence on the Unix base".

The document points to the necessity of moving from the "present ad-hoc craft practices" to "capital-intensive methods of efficient software production". It also urges that the UK should learn a trick from the Japanese by "importing ideas and methods rather than products".

The economic importance of the effort is stressed by calling for a close monitor of the UK software import bill, especially the import of tools.

At the same time, the value of the capital being used by every programmer in the country should be tracked. And techniques should be formalised for measuring programmer productivity, says the report.

The Alvey directors have taken on their own shoulders the responsibility for persuading British managers to regard the use of the new software tools as normal practice."

The software engineering five-year budget totals £65 million, with around £38 million support from government. It will be run by a small management team from public and private sectors who will farm the work out to others. Incorporation of the real-time language Ada into the scheme has been ruled out.

Talks on a major research venture on Ada were resumed this week between the Defence Ministry and the ICL-led consortium Ada Group. Alvey directors are hoping that a compromise on the vexed question of financing the Ada APSE will be reached so that they are not forced to mount a rescue operation.

As far as innovation is concerned, Talbot urges that the scale of UK research must be increased to compete with international competition and to introduce better co-ordination.

Innovation should be aimed at backing a number of promising approaches and testing them on life-size projects, rather than trying to evaluate them on apparent success in small-scale use.

TALBOT . . . "Market conditions more important."

Voices and alarms

by George Black

A VOICE driven word processor and a knowledge-based alarm system are the latest pilot studies for demonstrator projects under the Alvey Programme to be given the go-ahead.

BP's research centre at Sunbury will be working with its software subsidiary, Scicon, on the knowledge-based alarm system. The idea is to develop a real time method of sorting confused incoming warning signals. The end-product could be used in intensive care units of hospitals, on battlefields or in nuclear power stations.

The demonstrator project, if approved, is likely to involve a large teaching hospital, the Admiralty surface weapons establishment and several hardware manufacturers and instrumentation specialists.

The scheme is intended to span the expert systems and man-machine interface elements of the Alvey programme.

The other pilot study by Plessey is in the man-machine interface area. It aims at developing a word processor that could be driven by the human voice. Alvey programme deputy director Laurence Clarke stressed the need to put the product on the market for a realistic price.

He said the pilot studies needed to be under way as soon as possible to establish research goals. The main contractors for demonstrators had to be companies with

■ Continued back page

Multi-million PC deal for Welsh firm

WELSH subcontractor AB Electronic Products has won a multi-million pound deal to supply printed circuit sub-assemblies for the IBM Personal Computer. IBM would not reveal the value of the contract, AB's biggest yet, but said it was part of an effort to increase European production at the Greenock plant. AB already builds Acorn's Electron home computer and has done sub-contract work for IBM since 1966.

Plessey boss

FRANK CHORLEY has been appointed executive chairman of Plessey Telecommunications and Office Systems (PTOSL), replacing Des Pitcher. Chorley, previously deputy chairman and managing director of Plessey Electronic Systems, also becomes deputy chief executive of the whole Plessey Group. Eric Clark takes over as managing director of PTOSL, reporting to Chorley.

ICL denial

ICL has lost no time in denying what it describes as "serious allegations" made in the *Sunday Times*, that a confidential document is circulating among ICL's top management suggesting that the company's future looks far from healthy. ICL said its executives had seen no such report, and the company went on to contradict all the criticisms made by the newspaper article.

Ferranti ahead

FERRANTI'S half year profits are up 25% to £14.8 million on turnover ahead 30% at £207 million. Its order book stands at a record £500 million, up 17% on this time last year. Ferranti reports growth in its three main areas.

ICL doubles its profits to £45.6 million

by John Riley

ICL last week announced that it was moving further into the black, with doubling of profits and a 17% increase in turnover for 1983.

Capping that news, it gave preliminary details of its next generation personal computer, and last week reduced its 2900 maintenance charges by 12%.

ICL's pre-tax profit for 1983 was £45.6 million, compared with £23.7 million last year, and turnover increased from £720.9 million to £846.5 million over the same period.

Currency movements and cash from Computer Leasings, acquired in June 1982, accounted for £3 million of the increase in turnover, giving a "true" turnover increase of 12%.

But ICL chairman Sir Christophor Laidlaw warned that next year would be tough. "Don't expect the rate of progress to be as fast next year," he said. "We don't envisage a re-doubling of profits next year. Although we have confidence in the financial situation and our product strategies seem sound and properly targeted, we advise caution."

He added: "There are considerable competitive pressures and cause for concern about robustness in one or two main markets."

Both Laidlaw and Robb Wilmot, ICL managing director, emphasised that the development, manufacture and launch of new products in 1984 would eat into resources, and that although the DM1 distributed mainframe would be available in late 1984, it would not have any effect on 1984 sales figures.

Laidlaw said that after Christmas ICL would launch decision support and "quick build" systems, as well as an upgrade to its PC. The 16-bit PC would have colour, would offer concurrent CP/M and would support up to four users, he said.

Laidlaw added that ICL's PC strategy was geared to the multi-user segment. Wilmot confirmed this: "ICL is not going into the home market."

Wilmot did not break down sales figures according to different types of machine, but said orders

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Rival bank network is planned

by Philip Hunter

A NATIONAL network of cash dispensers to compete with the four major clearing banks is being planned by a consortium of banks, building societies and insurance groups. The plan involves using the 22,000 post offices as branch outlets for members of the consortium, to be called the Link Group.

The Post Office is expected to announce before Christmas a huge national programme of counter automation, including installation of automatic teller machines (ATMs) operated by the banking arm of the Post Office, the National Girobank.

The Post Office is holding preliminary talks with the Link Group to work out how to set up a national open-shared network of ATMs at most of the 22,000 post offices.

But it is also planned to install ATMs at big shops and rail stations, so Girobank customers no longer have to join long queues at post offices to draw out money.

The Link Group includes the life assurance group Allied Hambro, the Abbey National and Sussex Building Societies, Western Trust & Savings, HFC Trust & Savings, and the world's biggest bank, Citibank.

The National Girobank was also a member, but it has pulled out to concentrate on the Post Office's counter automation plans, although it still has an agreement with the group.

All members of the group lack a national network of branches, and the Post Office is the obvious choice since there is little chance of sharing with the big four banks.

In the longer term, there is the possibility of the Post Office's counter terminals being used to offer services to the customers of banks and building societies, with members of the group connecting their computers.

But in the short term, it is the ATMs rather than the counter terminals that interest the Link Group, with NCR and Philips favourites to pick up most of the business.

SPECTOR . . . "We are very close to defining a site in the UK."

Apollo close to UK landing for its European assembly

by Robert Parry

US manufacturer of upmarket networked workstations Apollo Computer is close to setting up a European assembly operation. And the UK is tipped as the most likely location.

"By mid-1984 we will move into the EEC, with a manufacturing plant," said Apollo president and chief operating officer Charlie Spector. "The UK is leading. We are very close to defining a site in the UK."

Spector says that the operation would involve more than just local assembly of imported sub-assemblies. "We are looking towards software engineering, depot repair and documentation production, as well as assembling kit."

Already Apollo's UK company is active with software companies, marrying up software with Apollo hardware.

The extent of the Software R&D activity in the UK was reflected in last week's Apollo Domain show in London, an exhibition showing off Apollo kit and the application software that can run on it. The show was Apollo's fourth – and the first outside the US.

The shows give Apollo and its system house customers a chance to show off the easy networking of the Domain system. At the London show there were 38 Domain systems from the various exhibitors all linked into a single network, with the right packages running to design and launch a satellite, quipped UK managing director David Howes.

Meanwhile Apollo is looking strong on the financial front. It has just reported third quarter results for 1983, with sales up to $52 million for the nine months compared to 1982's $18 million for the whole year. This, tied to the recent clutch of new products that made good the promise of processor independence and that the network is sacred, according to Spector, has given the company a rosy glow in investors' eyes.

'Robots protect jobs'

by our Parliamentary Correspondent

ROBOTS do not cut jobs, but protect job security, Trade and Industry under-secretary John Butcher told the Commons last week.

Answering a question from Labour MP Dennis Skinner, Butcher said figures from the British Robot Association showed a 61% increase in the UK's robot population to 1,152 by the end of 1982. He denied that there had been a corresponding job loss.

Experience suggested that robots improved competitiveness and thus increased job security, Butcher said. It was failure to use new technology that was more likely to lead to substantial job losses.

He added that in 1981 the number of robots per 10,000

people employed in manufacturing was 17.7 in Sweden, 8.7 in Japan, 2.8 in Germany, 2.5 in the US, and 1.2 in France and the UK. . .

In the Lords the Cable and Broadcasting Bill is expected to get a Second Reading this month. The Bill closely follows the provisions of the government's White Paper on cable television services.

Plessey invests £50m in gallium arsenide

by Dave Madden

PLESSEY has set up a new subsidiary in an effort to lead the world in gallium arsenide technology.

It will invest £50 million in the company, Plessey Three-Five Group, over the next five years. About £25 million will be spent on continuing work at Plessey's research centre at Caswell, and the remainder will go towards developing manufacturing capacity to exploit that research.

Plessey expects the group to employ "several hundred people" by 1987.

Dr John Bass, Plessey's director of research, said the company has four gallium arsenide processes going into pilot production now. It will be shipping samples to both internal and external customers, including US firms early in 1984.

Bass said that the gallium arsenide circuits were destined for "radar applications and use in the linear circuit field."

Plessey's interest in gallium arsenide as a practical alternative to silicon as a semiconductor material goes back to 1962, and the Caswell centre claims to have produced the first microwave circuit in gallium arsenide in 1974.

This latest investment springs from the conviction that gallium arsenide is set to take off in civilian applications, as well as more traditional military markets.

OECD calls for action on data flows

by Rory Johnston

URGENT action is required to secure international agreements on how data flows may be regulated if business activity worldwide is not to be seriously harmed. That was the message that emerged from the conference on Transborder Data Flow held in London last week by the Organisation for Economic Co-operation and Development, the club of the Western world's major industrial powers.

More and more countries, the conference was told, were trying to impose restrictions on international data flows for reasons of economic protectionism, national sovereignty, revenue raising, protection of secrets and even international politics.

If an international agreement was not reached soon, economic activity would be substantially dampened and everyone would be the loser, it was said.

James Grant of the Royal Bank of Canada criticised the efforts of his government to protect the Canadian DP industry by restricting the use of computer services across the border in the US, and in compelling foreign banks to keep records in Canada, incurring much extra expense. Such action could only lead to retaliation, which could block Canadian firms' access to the latest technology, which they needed in order to compete.

An international agreement could be worked out, Grant insisted, that would among other things allow Canadian government bank inspectors to access records, even if they were held in a computer in the US.

It was especially important to reach agreement to prevent a recurrence of what happened to Dresser Industries at the time of the crisis over the Soviet gas pipeline, Grant said. The US State Department stopped the company's French subsidiary from getting access to the corporate database in the US, through which all its day-to-day operations normally went, so the firm was paralysed.

Another major concern of the conference was clearing up jurisdiction over computer crime. Justice Michael Kirby of Australia said it was still not clear where a criminal could be prosecuted when he operated a terminal in one country to transfer funds dishonestly between bank accounts in second and third countries.

There were also tricky problems of jurisprudence, he said, for example if a Norwegian accessed an American database under US Freedom of Information laws and obtained data that was a state secret in Norway.

De-regulation of telecommunications in the UK and the US was also beginning to raise major problems, according to Hans Peter Gassmann, head of the OECD computer section. While the UK and US were relaxing their monopolies, other European countries were not, and PTTs in Europe were growing increasingly unhappy with having to deal with a host of small companies instead of one monolithic organisation.

Multinational companies setting up global networks would want to put the same or compatible equipment at all their nodes, but would find that some countries would only allow kit of their own specification to be attached to lines, said Johan Martin-Lof, chairman of the OECD computers committee.

International standards in this area were "an absolute necessity for business," he declared.

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Oakley answers neglect charges

by George Black

ALVEY Programme director Brian Oakley has answered criticisms that small businesses were being neglected in the national fifth generation effort.

He said he had no doubt that "small, innovative firms" would be involved in the five-year plan. Oakley promised that the consortia formed to develop the Alvey demonstrator projects would bring in small companies.

However, many small firms would not have a role to play, because they had "no particular expertise to offer".

The controversy was fuelled again in the Commons last week by Liberal trade and industry spokesman Paddy Ashdown.

Referring to the November 10 *Computer Weekly* story about software firms pressing for a fair share of the Alvey work, he asked Secretary of State for Trade and Industry Norman Tebbit whether he would ensure the Alvey directorate included a small firms representative.

He was told by under-secretary John Butcher that Alvey directors were appointed for their expertise, not because they represented industry sectors. Butcher added that small firms were already doing Alvey work.

But Ashdown said later that he was "certainly not satisfied" with the reply.

"I will raise this again," he said. "I will say that the industry says this is nothing like satisfactory.

"It's always assumed that innovation only happens in big companies, but there's a lot going on in small firms."

Referring to the 50% ceiling on governmental grants to companies participating in Alvey, Oakley said that small, innovative companies would have no difficulty in attracting funding.

The directorate has had more meetings with City finance firms, and there seems to be general agreement that a referral service for small firms, with an Alvey endorsement, may provide a solution to their capital raising problems.

The only area so far where Oakley has found the 50% limit to be a problem is with the development of formal methods for specifying systems design, where the payback is too long to attract investors.

The Alvey directors are to meet a deputation from the Computing Services Association early in the new year to discuss the role of small companies in Alvey, and some new proposals are likely to be put forward then.

A City financing deal may be one of them.

CSA secretary, Tony Lewis, said he was very encouraged by the directors' attitude to the CSA's request for a meeting, but a willingness to adapt was needed.

OAKLEY . . . "Small, innovative firms will be involved."

Mercury finds sites for dishes

by Nuala Moran

PRIVATE telecommunications carrier Mercury has announced sites for satellite communications dishes for UK and international links.

It has obtained planning permission to use East Wood Wharf in the London docklands enterprise zone and Whitehill Quarry near [illegible], Oxfordshire.

Two dishes will be installed on the docklands site: an eight-metre antenna providing television distribution in the UK and a 13-metre installation for transatlantic television and digital communications services.

At the Whitehill site the first dish to be installed will be an 18-metre unit, which will provide communications capability to North America via the Intelsat Atlantic region satellite.

Sandy Skinner, Mercury's marketing communications manager, said: "We are having constructive discussions with AT&T and we have also talked to other US carriers, including [illegible], TRT and Graphnet, about them taking traffic from Mercury."

XA to be offered by most PCMs

by Philip Hunter

MOST plug compatible manufacturers (PCMs) will be able to offer users extended architecture (XA) by April 1984, a year after IBM made its own announcement.

Latest to follow IBM is National Advanced Systems, which sells mainframes made by Hitachi. It says that it will be able to ship a conversion kit to XA in April 1984, before Hitachi itself makes XA available in Japan.

Most NAS users will receive kits free of charge as agreed in existing contracts, but some will have to pay $250,000 for them.

CURRAN . . . "Not lost too much ground."

Plug compatible maker Amdahl was quicker off the mark, making its XA available in June 1983, just three months after IBM. All users were offered it for nothing.

Extended architecture allows users a vast increase in virtual memory, from 16 Mbytes to two Gbytes, which means much bigger programs can be run and input bottlenecks be reduced.

NAS vice-president for European marketing John Curran thinks that PCMs have not lost too much ground to IBM by being late with the XA announcement. "Our estimate is that only about 50 accounts in all Europe are using XA," he says. "IBM is saying that you need XA sooner than you think, so that people don't buy a plug compatible machine."

But only a small proportion of IBM or plug compatible users have as yet followed the migration path from MVS 370 to XA.

Curran says that NAS would have been able to offer XA sooner if IBM had given the full specification when it made its first announcement, instead of waiting until shipments began. "If IBM had given the spec on announcement, we would theoretically have had XA five months earlier than it did," he says.

Sale of C&W shares is government flop

by Dave Madden

THE government came unstuck last week in its sale of Cable & Wireless shares.

When the application list closed for the 100 million shares – offered for sale by tender at a minimum tender price of 275 pence – only 70% of the offer was subscribed. The balance was left with the underwriters.

So subscribers will get their allocations in full, at 275 pence. At that price the government will net £262 million from the sale.

The response has clearly taken the government and its advisers by surprise. They went for a tender method because of the outstanding precedent set by the recent BP sell-off. But even the innovation of advertising the sale on television has not removed fundamental suspicions about Cable & Wireless' involvement in Hong Kong and the Mercury consortium.

On the eve of closure of applications, Kleinwort Benson, the merchant bank leading the issue, and its brokers were still reporting considerable interest from both private and institutional investors. Those same investors seemed to lose enthusiasm for the sale only when it came to signing the cheques.

But one spokesman for Cable & Wireless said: "Privately I wasn't surprised, the last few days have been nothing like the mad house we had first time round."

It may be that the government's initial sale of 50.1% of Cable & Wireless in October was too close to create much interest in the company this time.

A spokesman for Morgan Grenfell, one of the underwriting banks, commented: "We are disappointed, but I have no explanation yet. We expected the issue to be subscribed. Of course, the offer for sale was not so long ago, and there has been general concern about Hong Kong."

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DHSS goes for a single supplier

by Philip Hunter

THE Department of Health and Social Security has invited tenders for a huge terminal system, comprising 10,500 VDUs, 9,500 printers and 950 processors, to be installed at the 815 unemployment benefit offices in Britain.

The final contract will be awarded in December 1984, and the DHSS says it is looking for a single supplier, or consortium, with a proven record in the market, and turnover of at least £3 million.

The chosen supplier will have to act fast, says the DHSS, and installation will take place in 30 months, with one or two offices receiving a system each week.

The system will help to process unemployment benefit claims, and will be the first step in the DHSS' 20-year £700 million computerisation programme.

Each office will have a system to take over all the data preparation and some of the validation as present handled by central ICL 2966s.

"We are looking for a degree of local processing that stops well short of complete local processing," says the DHSS head of procurement, Mike O'Rourke.

At present staff in local benefit offices have little contact with the central computers, and use teletypes to punch up details of claims. There are two mainframe centres: one in Reading, with three 2966s to handle each of the three Southern regions; and one in Edinburgh, also with three mainframes for Scotland and the North.

Wendy Manger, manager of the Department of Employment benefit service, says the rise in unemployment has swamped local offices in paper, and the aim of the new system is to put as much work as possible online.

O'Rourke says the system must be able to respond in under three seconds to 95% of local validation operations, and in less then 10 seconds for online inquiry to the central mainframe.

d'AGAPEYEFF . . . Firms want to preserve competitive advantage.

More 'experts' than companies let on

by John Riley

THE use of expert systems in industry may be more widespread than we think – companies may be keeping quiet about it to preserve the competitive advantage it gives them, says analyst Alex d'Agopeyeff, principal of Consultants in Information Technology, who spoke last week to a select group of MPs, civil servants and others at a symposium organised in London by Motorola.

D'Agapeyeff was recently commissioned by the Alvey Directorate to survey the use of expert systems in Britain to date, prior to an awareness programme. The object of this is to bring academics and industrialists together to ensure that the Alvey project does not get bogged down in theory.

Brian Oakley, head of the Alvey Directorate, has said that important fifth generation research is being conducted by large traditionally non-IT companies.

"Academics talk about deep skills and uses of expert systems, for example in medicine and other areas," said d'Agapeyeff, "but the ICIs and Unilevers are likely to be using them less for knowledge recording, more for recording empirical knowledge – and at the same time making a tidy profit."

D'Agapeyeff went on to explain: "For example, by recording what their top salesmen really do – not what they say they do – in close orders, then even rudimentary expert systems can marginally improve the performance of the average salesman.

"It won't improve the best salesmen, and the worst are likely to be beyond assistance, but even a modest improvement in the middle ground means cash in the bank," he added.

"Of course, they are not going to let their rivals know what they are doing, so their developments in this area will remain secret."

Expert systems, he said, have value even when incomplete or not fully accurate: "Used in diagnosis of faults in power supplies for a company such as British Telecom, such simple expert systems will at least pick up common faults and improve the performance of the average technician."

D'Agapeyeff believes that the advantage of applying expert systems in this evolutionary way, where information is added all the time, is that line managers can assess the progress themselves.

SALES BRIEF

ICL scoops contract for upgrade

ICL has taken a £1.5 million upgrade contract from the life assurance firm, UK Provident. The contract includes the supply of the Content Addressable File Store (CAFS), which ICL last week announced will become a standard part of the 2900 range next year.

The contract with Provident involves enhancing existing ICL 2988 and 2966 mainframes into a Super Dual 2988 configuration, which will support more than 250 DRS20 Distributed Resource Systems and provide fast access to the data base of 500,000 policies via CAFS.

Police control

LEASCO Software is to supply Wiltshire police with a command and control system to replace current manual operational systems and provide communications between stations. Leasco's system has already been installed by other police forces, including West Midlands, Cumbria and Fife.

Wales links up

WELSH Water Authority has gone to Data General for a £1 million computer network to link up with its ICL 2966 mainframe. The Data General system will handle data preparation and validation, taking over from an old network of ICL 7502 terminals.

Suede contract

BURROUGHS has done over £200,000 worth of business with Guilford Kapwood, maker of suede, to replace existing Honeywell equipment. The order includes a B1900, and a B20 microcomputer.

Ultimate deal

PHILLIPS & Drew, one of the largest UK stockbrokers, has plumped for a £310,000 Ultimate minicomputer from Universal Computers for its Clerical Back Office at Brentwood, Essex. This is the biggest order yet for Rochelithe-based Universal, which specialises in the Pick operating system – currently the subject of legal wrangles between Dick Pick, its inventor, and makers of look-like versions.

BT spends £1m

GEC Information Systems has been chosen by British Telecom to supply five of its SL-1 digital PABXs in a £1 million contract for the new BT headquarters in London. The SL-1 is made by Northern Telecom of Canada, and GEC owns the marketing rights in the UK. It has so far sold 200 there.

Farming design

FARM tool maker Bomford and Evershed has ordered a CADCAM system from Counting House Computer Systems to help design its mowers, hedge cutters, cultivators and earth moving equipment. The CADCAM system will be used to produce design layouts, prototype drawings and final production drawings of new products.

Six for Scicon

SCICON has taken six more orders of total value £50,000 for its Scionic linear programming software, bringing total sales to over 50. Three of the latest orders are from abroad, including one from the Venezuelan electricity company, Inecel.

Seat for UK

SPAIN's leading car maker, Seat, has come to the UK for an administration computer system. Modicomp will supply a dual Classic systems to front-end the car maker's existing IBM 4341 mainframes and help improve communications with Seat's 250 dealers in Spain, and eight importers throughout Europe.

IBM chief calls for co-operation as computers and comms converge

by Donald Kennett

THE convergence of computers and communications should be a matter for co-operation, not collision, IBM's European chief said last week.

Speaking at the *Financial Times* World Telecommunications conference, Kaspar Cassani, president of IBM Europe, faced some anxious questions from the floor about what IBM would do to the European telecommunications industry.

"Our philosophy is that we are very interested in joint activities with communications suppliers," he said. "That is why I made the point that convergence was not about collision but co-operation.

Joint ventures were proposed by a number of speakers. Logica chairman Philip Hughes said: "Rational deals are the order of the day. You have heard it from IBM and AT&T. Who am I to tell you about it after that?

"Suppliers should recognise that almost all changes in communications regulation take a number of years to come into effect. Thus for several years bi-lateral deals with domestic manufacturers will be the best means of gaining access to many markets. Many European domestic manufacturers would benefit from deals by learning from foreign technology and experience."

But Michel Carpentier, director-general of the European Commission's information technology task force, spoke against alliances outside Europe.

"External alliances cannot replace an EEC-wide approach," he said. "US manufacturers operate in a very large market and Japanese manufacturers will benefit from the long-term concept of the Information Network System.

"The success of any policy approach will depend on the dimensions of the market in which it takes place. Europe is 30% of the world market, compared with Japan's 12%, but no EEC country on its own accounts for more than 4%.

"We have to accept national approaches to the problem, but they must be backed up by common approaches.

"Information technology is not only vital, dynamic and growing," he said. "But it is of fundamental importance to the European Community. It accounts for nearly 3% of EEC gross national product and there is little doubt that it will grow to become one of the most important sectors of the EEC.

"The three areas of IT – switching transmission and telematics – are expected by the early 1990s to represent a third of the EEC market and they will heavily influence the growth of all the other parts."

The call for alliances between European companies was echoed by Pierre Chauvance, managing director of the French telecommunications manufacturer CIT-Alcatel. The situation had scarcely changed since two years before he said, when he had made the same call at a previous FT conference. European companies traded more with countries outside Europe than they did with each other.

But opening national markets to outsiders brought the danger of the benefits going to non-Europeans, he said.

British Telecom vice-chairman Jim Hodgson said that, like AT&T, BT intended to be much more active in international markets. BT recognised that information technology was a world business, serving customers whose businesses were also run on a world basis.

Within the UK, BT would increasingly seek to provide packages of services. This was in recognition of the fact that the profits from bit transportation alone would decline with advances in technology.

CARPENTIER . . . Call for common approach.

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France to spend £2m on micro medical identity cards scheme

by Jack Gee

FRANCE will spend FFr25 million (£2 million) in 1984 to launch a series of pilot schemes for the use of microprocessor memory cards as medical identity cards.

Pierre Beregovoy, Minister for Social Affairs and National Solidarity, announced that children in Blois, in the Loire Valley, will be the first to benefit from the use of the medical smart cards.

"The cards will enable doctors to keep track of the youngsters health and particularly ensure their vaccinations are recorded," he said.

"To dispel concern among citizens about the confidential nature of health records, the Minister promised that the health card project, which will be the responsibility of the Bull computer firm, will be supervised by the national Commission for Computer Technology and Civil Liberties.

"This is a first step towards the creation of an individual health card for everybody. This card can simplify people's contacts with the health service, avoid duplication of medical tests and enable emergency operations to be undertaken with less delay," said Beregovoy.

Patients receiving kidney machine treatment will also be issued with smart cards. "These will give sufferers faster access without fuss or red tape to centres equipped with the necessary apparatus."

He added: "The whole object of these pilot ventures is to enable people, both those who are sick and those in good health, to travel about without having to worry about going through a long series of repeated costly medical examinations whenever they change their address."

In another venture, which will get under way in 1984, the medical faculties of universities in Paris, Bordeaux and Lyon will be linked to a pharmaceutical data bank. New sophisticated software is also to be introduced for processing medical information in Paris, Marseille, Lille, Bordeaux and Montpellier.

Small computer systems will begin managing patients' medical records on a purely local basis in Martigues, near Marseille, and Caenes. "These autonomous systems will be much more effective than using a big centralised mainframe," said Beregovoy.

Bull and the privately owned Intertechnique will operate these ventures except in Cannes where the hospital is already equipped with IBM machines.

"But it looks as if the American multinational cannot expect a big slice of the medical data processing contracts now being lined up in France.

Beregovoy said: "If price and performance are equal, we shall give the priority to French manufacturers, maybe with the knowhow and the capability to manufacture."

Tandy in challenge to the PC

by John Kavanagh

CONSUMER electronics giant Tandy is going for the IBM Personal Computer market with a new business microcomputer, launched in the US last week.

The new TRS-80 model 2000 is largely compatible with the IBM-PC – but claimed to be three times faster and better value for money. It runs one of the industry's standard microcomputer operating systems, Microsoft's MS-DOS, on which IBM's PC-DOS is based, and the launch brings some new marketing moves for Tandy in a new bid for business users.

The 2000 is based on the Intel 80186, the latest version of the 16-bit 8088. IBM's PC is built round the 8088. To heighten the intrigue, IBM owns 16.3% of Intel.

A $2,750 model includes 128K of memory and two 720,000-byte floppy disc, twice the capacity of the IBM machine at several hundred dollars less. Another model, with 256K, one floppy disc and a 10 Mbyte hard disc costs $4,250.

There are several other IBM-lookalike personal computers, but US analysts point out that Tandy has a massive chain of computer and consumer electronics shops.

Tandy is allowing software firms to sell their products under their own name instead of insisting on rewriting their documentation and selling under the Radio Shack label. This has discouraged companies from developing products for Tandy machines.

And Tandy is going for industry-standard products in the shape of MS-DOS and Ashton-Tate's dBase-II database system. It is also offering Microsoft's new mouse, a device for moving a cursor around the screen.

Tandy has no plans to bring the 2000 to the UK yet. But the launch of the machine coincided with the opening of its 27th business computer centre in the UK in the last two years.

UK computer marketing manager Vince Moore played down the IBM competition. "We're going for the MS-DOS market," he said. But he stressed that the 2000 was three times faster than the IBM machine.

He added: "We don't talk about market share but about profitable growth. In the last 18 months, we've maintained 24% growth in turnover and profit. Texas Instruments went all out for market share – and look what happened."

Texas has pulled out of the home computer business after heavy losses.

Personal boost by DEC

by Philip Hunter

DIGITAL EQUIPMENT hopes to rescue its personal computers from the market hammering they have received this year by emphasising IBM-compatibility and offering more support to users and dealers from a new customer support centre in Basingstoke.

The company last week launched an improved version of the Rainbow 100, called 100+, with the MS-DOS operating system which is used on the IBM PC running alongside CP/M, and a Mbyte Winchester hard disc system, as well as a floppy drive.

Meanwhile in the US, DEC has appointed four taskforces under marketing vice-president Edward Kramer to carry out sweeping reviews of its personal computer marketing, sales, administration and engineering.

DEC has also made a big effort to improve software available with its Rainbow range, and now offers the Lotus 1-2-3 spreadsheet package, which recently stormed the US personal software market, and the MS Window from Microsoft.

There is also a range of business software adapted for the Rainbow by a number of software firms, including Software Ltd with a range of accounting packages; Finsar with a financial planning system; and CACI with its System Factory, aimed at improving programming productivity.

"We have got to the point when all the big names in software are producing software for our machines," said Paul Musson, DEC small systems business manager.

DEC has a long way to go to attain IBM's momentum in the PC market. At present DEC has 5% of the UK market. UK managing director Darryl Barbe says he is still hoping for PC sales to account for one-third of turnover by 1987.

Healthy signs for software writers

by George Black

THE government's decision to bring competition into health service catering, cleaning and laundry could prove a bonanza for software writers.

A Department of Health and Social Security memo has required all health authorities to report to the Secretary of State by February 00 how they will implement the new policy of open tenders.

The treasurers' organisation, the Chartered Institute of Public Finance and Accountancy (CIPFA), has commissioned system house Logica to produce a design for a computer system that will help authorities assess bids.

The design should be ready by mid-January.

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LLOYD . . . "Parliament has tended to avoid technology."

Start-up micro makers 'never had it so good' says Tory MP

by John Riley

THE microcomputer industry is not going through a shake-out; there will not be dominance by a few large companies, and start-up micro manufacturers have never had it so good.

That was the message delivered to Motorola's symposium on new technology in London last week by recently-elected Tory MP Philip Oppenheim, who takes a strong interest in IT matters. But his views do not find many takers in the IT industry.

"Computer manufacturers now use standardised bought-in components which means that small companies don't have the R&D costs that were prohibitive a few years ago. For £100,000 they can set up and assemble a machine similar to the IBM PC," said Oppenheim.

"I don't believe there is a dominance by a few megaliths in the PC market. For example even IBM only has 28% of the micro market in the US and 10% in Europe," he added.

But David Broad, managing director of the Logica Group and chairman of the British Microcomputer Manufacturers' Group thinks that view oversimplistic.

"Would that it were that easy," he says. "You require a good deal more than £100,000."

Industry pundits have widely expressed surprise at the speed with which IBM has achieved a 28% share of the US micro market – in less than two years.

Speaking at the same symposium, Ian Lloyd, Tory MP for Havant and chairman of the Parliamentary IT Committee said: "People controlling technology must have some understanding of it, otherwise they will make wrong decisions."

Lloyd believes that Parliament needs more computers and that MPs need to know how to use them. "Parliament has tended to avoid technology, preferring to debate other things," he said.

Lloyd called for a £10 million investment to streamline Parliament's own IT systems.

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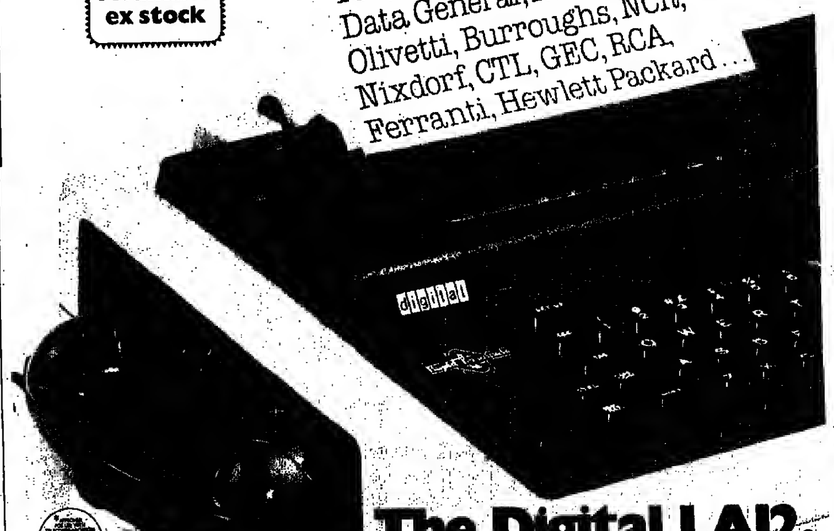

The Digital LA12.

Dundee . . . new work for NCR's banking centre.

NCR wins $75m Euro bank order

by John Kavanagh

A $75 million order has brought NCR its biggest contract in Europe, giving it over 50% of the Norwegian banking market at the expense of European suppliers and bringing new work to factories in Dundee and Germany.

The order is from Fellesdata Data Centre, which serves 190 Norwegian savings banks, and Den Norske Credit Bank, the country's main commercial bank. These organisations currently use Ericsson and Philips equipment.

NCR's Dundee factory will supply 600 of the new 5080 self-service auto-teller machines and 1,700 Tower 1632 computers based on the Motorola 16/32-bit processor and running the Unix operating system.

In addition, the German factory will provide 3,000 of the eight/16-bit Decision Mate V microcomputers.

The order also includes 4,500 of NCR's Series 5000 financial terminals and 2,500 Worksaver word processors.

The Towers will act as regional controllers for the terminals, while the Decision Mates will be installed in branches.

The banks say NCR was chosen because of its commitments to international communications standards. Fellesdata runs a central IBM mainframe – and NCR makes much of the fact that its CNA network architecture is compatible with IBM's SNA.

"We hope this success will spill over into Sweden and Denmark," said Jim Adamson, manager of the Dundee factory. "There are some big contracts coming up there."

He added that the plant was taking on people steadily. The research and development staff had been increased by 50% to 155 in the last 18 months. The production workforce is 950.

The success of the Decision Mate V has created over 300 jobs at the German factory in the last year.

Small telecomms firms form group

by George Black

A NEW group has been set up to lobby for a fair deal for smaller companies in competition with British Telecom.

The Association of Telecommunications Services is a fledgling pressure group aiming to protect its members' interests in the framing of legislation for both British Telecom and its private rival Mercury.

Ascom, as it calls itself, supports the creation of Mercury – not surprisingly, as Cable & Wireless, Mercury's parent, is one of its founders – but opposes the government's intention to retain a "duopoly" for the next seven years.

"Kenneth Baker's official statement of intent on this is in direct contradiction to his government's policy of liberalisation," said Ascom chairman Michael Wolff. He also wants the system of licensing for value added services abolished.

The association comprises Cable & Wireless, Air Call and its new acquisition CCI, Lydiastar, BFT Communications and British Monomarks.

Cable's value-added services division manager, John Carroll, said BT should not be allowed to subsidise VANS out of its international operations profits.

He feared that the Office of Telecommunications would not have the teeth to be able to police the market adequately.

"The rest of us are fleas compared to the elephant of BT – we get 3% to its 97%," said Carroll. "Oftel must have enough accountants, engineers and managers to be able to resolve cases quickly. If BT is not regulated it could start a price war which would force all its rivals out – and that is not what the government wanted."

Cable & Wireless has not declared itself in favour of splitting up BT, but there is likely to be feeling within Ascom that this may be the only way of ensuring the survival of its members.

Meanwhile C&W is gearing up for a £20 million-plus investment in VANS over the next three years and expects to take on 250 people. Another key man in the programme will be Peter Moulson, a former senior civil servant at the Industry Department recruited to head the C&W "fair deal" lobby.

IBM and BT deny joint banking deal

by Donald Kennett

THE banks are in talks with IBM and British Telecom for the plastic money (EFT/PoS) network the banks want to build by 1986, said the Banking Information Service last week. But there is no question of a joint proposal from the two.

Since the Committee of London Clearing Bankers (CLCB) group announced plans for the network in May, there has been speculation that IBM and BT were undertaking a major joint venture, possibly involving some sort of network management. Last week, IBM reaffirmed its keenness to make such partnerships with telecommunications suppliers at a *Financial Times* conference (see page 4).

But a spokesman for the Banking Information Service said the banks were involved in discussions with both IBM and BT and that their proposals might involve a degree of co-operation between them.

Plans are still at a very early stage, however. There are no firm proposals and no decisions have been made about suppliers. And there is certainly no joint proposal from IBM and BT.

One decision that has been made since May is that EFT/PoS terminals will be supplied competitively by manufacturers working to standards published by CLCB and bought by banks and retailers individually, rather than by central purchase for the whole scheme. Figures for the network are 100,000 terminals and 1,000 access nodes initially.

Decisions on cost, speed, security and capacity for future expansion have yet to be made, and the dividing line between the network itself and the services that banks provide over it is still not clear. Neither are the arrangements for the funding, ownership and management of the network.

There is still a question mark concerning legal liabilities that may be incurred by card issuers.

ISO soon to get APL comments

COMMENTS on the draft standard for the APL language will be sent to the International Standards Organisation after the end of January. Copies of the draft are being circulated by Paul Berry of IBM Portsmouth to UK experts. The British Standards Institution intends to adopt the ISO specification.

Cut-throat field

THE microcomputer business is too cut-throat, says UK firm Data Type, which has dropped Televideo personal computers. The company says dealers do not pay and the market is too crowded. "A dealer goes to the credit limit with one distributor, then moves to another while delaying payment to the first," said sales manager Richardson. Data Type will continue selling Televideo terminals.

MBS takes over

DEC terminal supplier M Business Systems has agreed to acquire Alveronic Computer Systems of Hull, a DEC authorised computer distributor and maintenance company. MBS will issue new shares worth £ million to Alveronic, which forecasts turnover of £2.8 million to September 1983. Alveronic will make up about 15% of the enlarged equity.

Trophy winners

TROPHIES aimed at encouraging the UK technology industry will be presented at the new Techex exhibition in February. The awards are sponsored by Barclays Bank, the Confederation of British Industry, the Institute of Patentees and Inventors, the British Technology Group and the Department of Trade and Industry. Award classes include inventor of the year, technology transfer and technology marketing.

Mail access

USERS of the IBM-PC can now access the Micromail electronic mail service launched in July by ACT and British Telecom. Initially aimed at users of the Sirius and Apricot micros, the service consists of modem cards and software to enable micro users to access Telecom Gold's Dialcom mailbox computer. It is available as a single sourced package from ACT.

French buy $6m stake in Comserv

by George Black

US manufacturing software company Comserv is to sell 20% of its stock to a French firm for around $6 million.

Comserv president Richard Daley said there was an agreement in principle with Sema-Metra, software subsidiary of the Bank of Paris, for it to buy 850,000 shares. He hoped the deal would be signed by the beginning of next year.

The two companies plan to set up a joint venture which could give Comserv an entry into Europe, and lead to French, German and Spanish language versions of its AMAPS manufacturing resource planning suite.

The new company is intended to take in all of Comserv's existing European staff, and some from Sema-Metra, a total of around 25 employees. They will be led by Comserv's international vice-president, Stuart McIntosh.

Semi-Metra is a $100 million operation designing systems all over the world, including IBM and HP-based manufacturing installations. Its strong presence on the Continent could provide the platform for expansion that Comserv has been seeking since the beginning of the year.

So far Comserv has achieved 30 to 35 sales of its AMAPS mainframe package in Europe, but it feels the French alliance could help accelerate expansion into Europe. Last year its worldwide sales were $25 million.

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If you'd like to know more, contact Property Marketing SDA, Estate Office, 102 Telford Road, Edinburgh EH4 2NP. Tel: 031-343 3361/1911.

Scottish Development Agency **Property Marketing**

Availability correct at time of going to press. Sizes stated are approximate.

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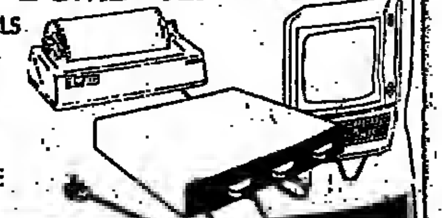

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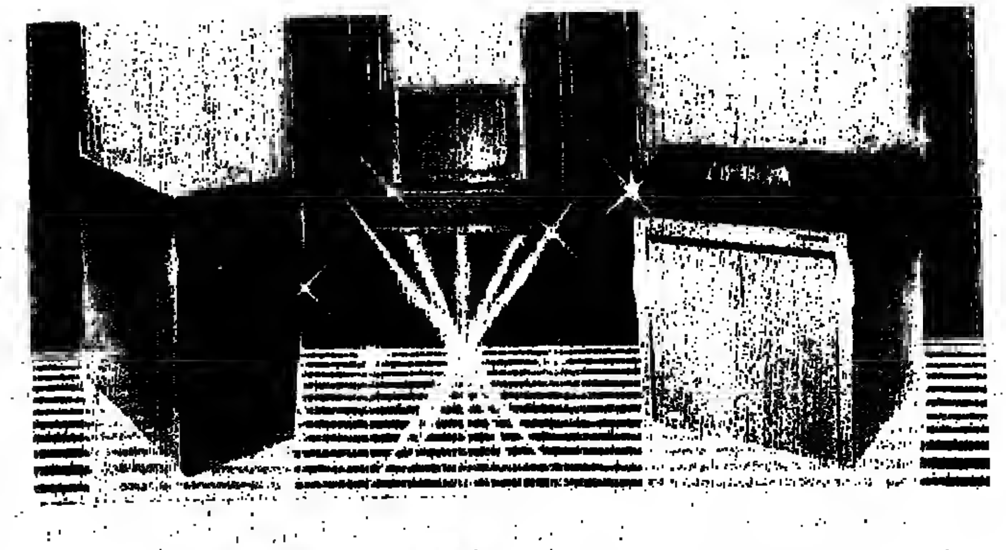

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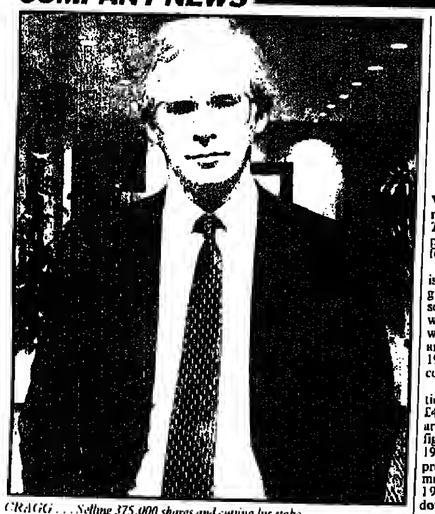


CRAGG . . . Selling 375,000 shares and cutting his stake.

Pericom joins the Unlisted ranks

by Dave Madden and Philip Hunter

PERICOM Data Systems, the terminal builder based in Milton Keynes, is the latest high-technology recruit to the Unlisted Securities Market.

The company is placing 16 million shares at 140 pence each. At that price, Pericom is capitalised at £10.5 million. It is placing 21.5% of its equity, and the total includes 250,000 new ordinary shares which should raise around £200,000 for the company.

Investors in Industry is reducing its stake in the company from 35% to 22%, while Ron Cragg, founder, chairman, and managing director, is selling 375,000 shares and cutting his stake from 58.9% to 51.9%.

Pericom made a pre-tax profit of £985,000 on turnover of £7.2 million in the year to September 30 1983 – against £52,000 on turnover of £1.7 million in 1979. The company has not made a profit forecast, but has said that the current year is above the budget, orders look good, and a net dividend of 1.7p per share is expected this year.

At the moment, turnover splits: Manufacturing 74%, distribution services 26%.

Pericom was registered in 1975. In September this year, it set up a wholly-owned subsidiary, Data Rent, which will offer an equipment rental service, and at the same time Pericom Holdings was incorporated in Delaware, US.

The US operation comprises Pericom Inc, and British Centres. Pericom Inc. has not started trading, but British Centres, based in Dallas, Texas, markets Pericom and other British manufactured hardware lo the US, and supplies US-built components for UK computer manufacturers. Pericom employs about 130 people.

Pericom is essentially a terminal builder. It claimed o 6% shore in the multi-host terminol market for its 7800 series in 1982. In its native mode, the unit is software compatible with DEC VT100 VDUs, and in emulation mode it can handle other protocols.

ICL looks healthy—but new strategy is needed

WHEN the patrician Questor City notes column of the *Daily Telegraph* urges us to forget the past and buy, then ICL is surely forgiven.

Indeed Sir Christopher Laidlaw is hanging up his boots with the grim satisfaction that ICL has a far sounder base than looked possible when the government came up with £200 million in loan guarantees to rescue the company in 1981 – but Sir Michael Edwardes could still be in for a hard ride.

ICL has swung back dramatically from that nesr fatal loss of £49.8 million in 1981, and profits are now running close to the 1979 figure. In the year to September 1983 the company has reported pre-tax profits up 80% to £45.6 million against £23.7 million in 1982. Net profit more than doubled to £38.3 million.

Turnover for the year was up from £721 million in 1982 to £846 million in 1983. In comparison with 1982, sales split as follows: Equipment sales to customers £371.9 million (£270.5m), sales to lessors £33.3 million (£73m), rentals £76.4 million (£59.2m), software and services £364.9 million (£324.5m).

The same numbers break down geographicslly: UK £497.2 million (£412.1m), rest of the EEC £107.9 million (£94.4m), Europe outside EEC £40.7 million (£41.2m), Africa and the Middle East £98.7 million (£86.9m), Australasio £82.2 million (£69.9m), and the Americas £19.8 million (£16.4).

Over the same period borrowings have halved from £177.8 million to £86.2 million thanks to two rights issues.

The company has given o final dividend of 0.7. It did not give one last year.

So the numbers look healthy enough. Why then an immenfiate 3 point fall in ICL's shsre price? The profit figure in second half 1983 of £22.1 million represents a fall from £37.2 million in second half 1982. More fundamentally the gradual move towards profits over the last two years has been through slimming and cost reduction. Controlling cash flow has been an overriding priority.

That strategy looks just about exhausted so nny further increase in profit must now come from turnover. And as the company admitted the 17% increase in sales this time is misleading. The real figure is 12% – the bnlance comes from favourable currency movements, and the first full year's contribution from Computer Leasings, acquired in June 1982.

Both factors have flattered revenues, as has the drift towards customers purchasing equipment outright, a movement spearheaded by IBM, and now encouraged by the remainder of the industry.

What does stand out in the figures is that like the mnst mediocre football teams, ICL has disnster away from home. Geographical distribution from the UK actually rose up marginally during the period to 58.7%, and although sales improved in real terms, they fell as a proportion of overall business.

For ICL to be a truly international supplier it must make its mark in the US, where it remains virtually unknown. 1983 has been another year of reconstruction, and it is beginning to look as if ICL will have to buy its way in before it will be taken seriously.

Analysts say Hitachi investors take a dim view as shares plummet in Tokyo

ANALYSTS in New York and Japan were pouring oil on troubled Japanese waters last week. They believe investors are taking an unreasonably dim view of Hitachi's prospects in the wake of its settlement with IBM.

Hitachi's shares have taken a terrible hiding in Tokyo, as details of what is being called the Nip-Sting deal emerged. They have now lost 14% of their value since the beginning of October – falling below 800 yen – in a market that has just about held its own.

The *Wall Street Journal* suggested that Hitachi had incurred penalties of about $300 million in the settlement, made up of $240 million in licence payments over eight years, and $42 million in legal costs. That guess does not look too wide of the mark, if only because Hitachi has made no effort to contradict it.

Yet despite these costs, Hitachi's prospects look good. Analysts do not expect the settlement to affect seriously Hitachi's earnings.

For the half year to September 30, 1983 Hitachi has reported consolidated net profits of $337 million, on sales up 8% at $8.8 billion.

Analysts are still looking for profits up 10% at $702 millinn on turnover of $18.3 billion in the year to March next, and a 9% increase to $761 million profits in 1984.

Obviously the IBM deal will affect Hitachi's prnfit margins in its computer division, but thot represents only 20% of the company's total sales.

The semiconductor business looks particularly healthy now. The company is reported to have shipped over 40 million 64K RAM processors in the first nine months of the year, against just 18 million in the whole of 1982. In the six months to September 30 sales in the division were ahead 23%.

Sn not only does reaction to Hitachi's position look overdone; pessimism may have been misdirected.

Fujitau is reported to have come to similar terms with IBM. But Fujitsa is not a diversified corporation like Hitachi – its business is selling computers alone.

One effect of Hitachi's settlement is that it has told Japanese customers to buy a licence for MVS and other operating systems direct from IBM, or revert to non-IBM compatible Hitachi operating software. Either way, Hitachi will pay the bill.

No doubt the hidden costs of this will push the penalty well over the $300 million figure, but Hitachi still looks capable of absorbing it.

But if Fujitsu has to advise us to do the same, theo its revenue would be seriously compromised.

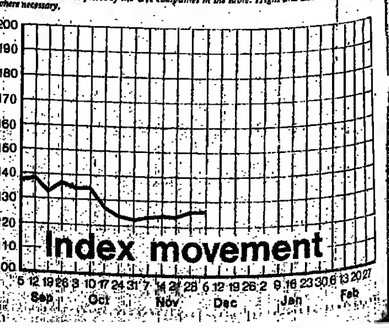
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 2/12/83 Index+ 126.40 Change +1.8

Pence 1983 High	Pence 1983 Low	London Stock Exchange Stock	Pence Price	Pence Change	$ 1983 High	$ 1983 Low	US Stock Stock	$ Price	$ Cng
305	227	Abingdon (10p)	312	+ 3	20	16¼	Amdahl	20	- ½
845	540	ACT (Hldgs Corp) (25p)	800	+ 5	60	39½	Apple Inc	59½	+ ½
443	348	Atlantic Comp (10p)	442	+37	55	34½	Auto Data Pro	50½	- ½
68	41	B Soy Kent (10p)	64		6¾	4¾	Burroughs	6¾	- ¼
193	104	Chubb (10p)	194	+ 8	10	6¼	Comp Assn	9½	
176	118	Dely Inform (25p)	167		23	16½	Comp Sciences	19½	
420	192	DASE (20p)	420	+15	34¼	8½	Comshare	30½	- ½
292	208	DPCE (5p)	240	+ 2	40¼	30½	Control Data	34½	- ¼
263	173	Datastream (5p)	193	+ 3	26	22¼	Cray Research	25½	- ½
603	320	Delta Group (25p)	540	+ 8	40¼	30½	Data General	37½	- ½
418	264	E-sel (25p)	400		29¾	19½	Datapoint	27½	- ½
638	411	Ferranti (50p)	530	+15	32¾	19½	Digital Equip	30½	- ½
248	163	DEC (5p)	190	+ 2	41¼	23½	Dtic Data Sys	35½	- ½
93	64	ICL (25p)	81	+ 1	14¾	9¾	Gen Automation	12	- ¼
65	41	Kalamazoos (10p)	57	+ 1	10¼	6¾	Gould	9½	- ¼
376	223	Modelex (10p)	335	+13	61	34¾	Honlfy	41	- ½
252	228	Logica (10p)	237	- 13			Honeywell-Packard	39½	- ½
295	230	Logica (1p)	270	+ 12	123½	86	Honeywell	115½	- ½
196	120	Multihead (25p)	180	+ 4	44¼	30½	Intel	39½	- ½
690	487	N'mberland (10p) (50 dis)	640	+ 17	133¾	96½	IBM	125½	- ½
220	169	Norsk Data	220	+ 34	71¼	54½	Lasen Ind.	68½	- ½
178	118	Office & Elec (25p)	168		12¾	12¼	MDS (Mohawk)	12½	- ¼
1750	1110	Philips Lamps (Fl 10)	1640	+32	19	19	MSA (Mgmnt Sol)	19	- ½
298	198	Plessey (25p)	208	+ 3	18½	6¾	Magnetic Assn	18½	- ½
20	18	Quest Auto (10p)	20	+ 1	3½	2½	Modutek	3½	- ¼
297	184	Racal Elect (25p)	186	+ 3	148	86½	Motorola	144½	- ½
318	215	Sec Comp (10p)	288	+ 34	18	9¾	National Semi	17½	- ½
515	276	Systems Des (10p)	505	+ 6	93¾	61½	NCR	132½	- ½
238	214	Telemetrix (5p)	238	+ 4	39½	24	Perkin Elmer	37½	- ½
652	418	Thorn-EMI (25p)	630	+ 2	29½	19¾	Prime	29½	- ½
132	120	VCA (10p)	120	+ 4	20¼	12¾	Raytheon	20½	- ½
201	130	United Leasing (25p)	201	+ 4	37½	26½	Sigma	34½	- ½
					49¼	30½	Silicon Comp	46½	- ½
					24½	16½	Storage Tech	24½	- ½
		Unlisted Securities			6¾	3¾	Tandem	6¾	- ¼
122	104	Accu (10p)	118		60¼	34¾	Tandy	47½	+ ½
126	78	Acc Comp (10p)	76		171	106½	Texas Inst	171½	- ½
120	97	CPU (10p)	120	- 2	40¼	30½	Tymshare	40½	- ½
169	113	Cifer (10p)	118	+ 2	40¼	30½	Wang Lab B	40½	- ½
990	145	Cossor (CA) (10p)	850	+ 2	12	8½	Wyly	11½	- ½
256	167	Feedback (10p)	252	-32					
214	85	Ham Bus Sys (10p)	142	+ 10					
81	60	Intec (10p)	71	+ 3					
280	150	Int Computer Tech (20p)	225	+ 8					
64	27	J B D (5p)	30						
50	30	M M L (5p)	35	+ 1					
309	165	Memory Comp (R10p)	235	+ 8					
760	2070	Micro Bus (10p)	240	+ 15					
640	398	Micro Focus (10p)	630	+40					
448	310	Micronet (10p)	410	+ 28					
227	135	Molec 33 (10p)	212	+ 5					
84	71	Molecular (10p)	82	+ 2					
240	168	NMW (£1)	222	+ 4					
208	170	Normalair (25p)	208	+ 6					
162	81	Rollo & Nolan (10p)	125	+ 5					
187	90	Sabre Data (10p)	143						
120	69	Trident Comp (10p)	90	- 1					
120	95	Zygal Dyn (5p)	120	+ 3					

The table shows the closing prices in London on Friday and in America on Wednesday. The Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.



CPU bids for its UK distributor

CPU COMPUTERS, which came to the Unlisted Securities Market in June, is set to buy its UK distributor, Computer Ancillaries (CAL).

CPU has bid for the 71.8% of the company that it does not already own. On the basis of CPU's average share price of 123p, the deal is worth some £285,000. CPU will pay 18 of its shares for every 20 in Computer Ancillaries, which will require an issue of 231,400 new CPU ordinary shares.

In April, CPU took a 28.8% stake in CAL to protect its own interests. As well as distributing Durango machines, CAL sells the CAL personal computer, designed and built by CPU's LSI computer division. Now CPU has acted because Computer Ancillaries is strapped for cash.

Tom Fitzpatrick, CPU chairman and joint managing director said: "CAL has to restructure on a financial basis. It needs fresh capital. The company is strong in marketing, but I would put a question mark against its finance and administration."

FITZPATRICK . . . Up market.

CPU has never been afraid to make acquisitions. In 1982 it took a controlling interest in Synertec, Shugart's exclusive German distributor, and in the same year bought terminal distributor Hazeltine.

Fitzpatrick commented: "CAL brings us a very strong marketing organisation. Its product line takes us up market."

The combined group will have an installed base of 10,000 machines and a new systems group comprising CAL and LSI with an aggregate turnover of £7 million.

Significantly, CAL gives CPU an outlet in London for the first time. Fitzpatrick is keen to sell LSI's new Z80 and 8088 based Octopus, aimed directly at CCT's Apricot, through CAL.

Company News is compiled by Dave Madden

ACCRON/68000 S100-32/16 Supermicro with Simultaneous CP/M

Superfast 32 bit MC68000 processor running at 8Mhz addressing up to 4MB of 16 bit memory without wait states.

Intelligent Z80 based I/O Processors with 64KB RAM can also run simultaneous CP/M (included) served by the 68000. (Up to 8 users). All standard CP/M software will run simultaneously without modification.

Bundled software includes "Mirage" the fast, all British, multi-user, time-sharing operating system, command file processor, print spooler and comprehensive set of utilities.

Also included are structured BASIC compiler supporting data mapping, long meaningful labels and data names. A Pascal compiler adhering closely to the ISO/BSI Level-0 and ANSI/IEEE standards. A macro assembler & linker, IEEE double precision floating point arithmetic, a full screen editor and the "Window" word processing package. TRAP transaction processor. A fast, secure, keyed-access, record maintenance system with full multi-user file and record locking and fully integrated with the BASIC and Pascal compilers.

Disk capacities from 10MB to 300MB supported and available based on Winchester and/or cartridge disk drives.

Sample price for a basic 4-user machine with MC68000 CPU, 256KB RAM, Z80 based I/O Processor, a total of 4 serial and 1 parallel ports, 12-slot bus, 8" 1.3MB floppy and a 10MB Winchester including the above software: £7,850. All systems are fully expandable. XENIX available in the spring of 1984.

Phone Theo Van Dorp, John Alterne or Steve O'Donnell for more information. Dealer enquiries are invited.

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THE TECHNOPRENEURS

Tony Davies, Chief Executive, Information Technology Ltd.

Information Technology Ltd (ITL) markets computer based systems for business administration and office automation. It was formed in 1980 when Davies, an electronics graduate, acquired control of Computer Technology Ltd and backed a spin-off from IBM. ITL now operates as a parent company to three wholly-owned subsidiaries–Computer Technology Limited, Office Technology Limited and Network Technology Limited.

In early 1983 ITL decided to raise further capital for expansion and Citicorp Development Capital, together with other investors, helped provide the necessary finance.

Employees500.Turnover£18million.

Tim Coldwell, Chief Executive, Xenotron.

Xenotron is the brainchild of its founder, Tim Coldwell, who started the company in 1976. The company designs, develops, manufactures and markets through sales and service subsidiaries in five countries a range of intelligent graphics work stations for the electronic technical publishing (ETP) and graphic arts industries.

In 1981, Xenotron decided to raise further capital for expansion and Citicorp Development Capital provided equity and debt finance and took a 10% stake in the company.

Employees 120.Turnover £5million.

David Gare, Managing Director, Instem Computer Systems Ltd.

When the US parent decided that this Staffordshire computer systems subsidiary, though successful, did not fit in with its long term development strategy, the management, led by managing director David Gare, decided to bid for the company.

He then approached Citicorp Development Capital, whose swift response and detailed industry knowledge were instrumental in bringing the deal, which involved re-financing as well as buying out, to a successful close. Since then, the company has increased its penetration of UK and overseas markets aided by Citicorp's network of contacts.

Employees 100.Turnover £4million.

Three uncommon men, with this in common: they are all entrepreneurs who formed or bought their own high technology company, and Citicorp Development Capital (CDC) helped provide the venture capital they needed.

Are you a technopreneur? Here are some things you should know about Citicorp Development Capital (CDC).

* Since starting up in the UK three years ago, we have invested in over 20 companies which now have a total annual turnover of over £180 million.
* We undertake two main types of venture capital financing: "Replacement Capital" to buy out existing shareholders and substitute a new capital structure. This includes management buy-outs; acquisitions and mergers; and making a public company private. "Expansion Capital" to finance the further development of a successful company, particularly during the early phases of accelerating growth.
* We are planning to invest over £100 million in venture capital in Europe in the coming years.
* We look only for a minority equity holding, because we believe that the operating management should be incentivised by substantial equity ownership.
* We are more interested in the future cash flow potential of a company, and attach less importance to the "borrowing base," often called "security." Our aim is to invest in companies which will become successful.
* Unlike more traditional sources of finance, we are attracted to a business by the management's abilities and its market potential, not purely by financial considerations.
* We are prepared to take a long term view of investments, and will help determine the exit route most suited to the requirements of the company: Stock Exchange or USM listing, selling on to another company, or a repeat buy-out of our equity by the management.
* CDC's professional staff come from general management, technology, and manufacturing, as well as financial backgrounds. They are therefore able to understand the entrepreneur's business and investment needs, and can contribute continuing assistance and expert advice on the company's development.
* We have access to the international network of Citicorp, the world's largest financial institution.
* For particularly large investments, we can assemble and lead a syndicate of investors.

"Senior CDC executives give the impression they are professionals in a rather amateurish market. Their 'modus operandi' is based on the phenomenally successful venture capital offshoot of the mighty Citibank." *Financial Weekly 15 April 1983.*

If you need £250,000, or many millions of pounds, bring us your proposition. Contact Jon Moulton, Charles Gonszor, Mike Smith, Frank Neale, Liz Hewitt or Eric Cater. We will give a quick response to your investment proposal.

Or, if you simply would like a copy of our brochure containing more information, just ask.

Citicorp Development Capital

155, STRAND, LONDON WC2R 1LS. Tel. 01-438 1563. Telex 299831. CAPITAL MARKETS GROUP

MICRO NEWS

REID . . . *Two-year project to convert speech into digital form and back again.*

Work on chip to recognise speech

by Philip Hunter

AN Australian computer scientist is developing a prototype speech processing chip that could lead to much improved performance from speech recognition products. At present speech recognition is reliable only with small vocabularies – less than about 100 words – and even then the machine has to be trained to just one speaker.

Dr John Reid is at the first stage of a £400,000 two-year project to build a prototype voice scrambler, or vocoder, to convert speech into digital form and back again.

The key to what Reid hopes will be a much more powerful product than existing ones is a dedicated chip incorporating the highly specialised mathematical formulas, or algorithms, used in decoding speech and matching the spoken word with the stored version.

No existing speech recognition product uses a dedicated chip, although Texas Instruments offers an add-on board to its Professional Computer for speech recognition, which uses its TME 320 signal processing chip.

This chip is partially dedicated to speech recognition, but is used for other signal processing applications as well.

Even so the development has enabled TI to cut the price of speech recognition below the previous common level of £10,000. The board costs just $2,600.

The speaker has 50 choices of word at any time, and the machine can recognise short sequences of words so long as each one is clearly articulated, with a pause between each word.

In the UK, Logica and Marconi offer products based on older technology, dedicated hardware using conventional chips.

Logica offers a box at £15,000 which can store 120 words, with an active vocabulary of 25 words. Marconi can do better – its SR128 costs £9,860 and offers an active vocabulary of 100 words.

Logica's Logos is used in simple baggage handling tasks at airports, an application needing a small vocabulary but high accuracy. And Marconi's SR128 has been used for over a year by the Royal Aircraft Establishment, which reports that the product has an error rate of under 2%.

There is a limit to how much improvement in vocabulary can be achieved by using dedicated processors, and in the long term new algorithms will have to be developed that can break down speech into its basic sounds, or phonemes.

The National Physical Laboratory is researching this long-term goal. Ralph Rengger, a member of the speech recognition team, says the NPL is investigating the possibility of using a computer to extract the basic building blocks of words.

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But don't delay too long. Unix's time has come and demand is likely to be heavy for the limited number of places.

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DG offers pay as you sell deal

by Phillip Hunter

DATA GENERAL plans to launch in the New Year a dealer programme for its Desktop Generation micros with a new flavour – dealers will only pay the company for a machine when an end user buys it.

Normally dealers have to estimate demand and place a volume order with the manufacturer, with payment up front.

DG has already stepped out of line in the US by handing machines out to its newly-appointed dealers for the micro without asking for immediate payment.

Data General's UK distribution manager Colin Milner hints that the UK will follow the US lead, although the programme is not yet complete. The response in the US has so far been good and the aim is to implement the best parts of the US programme in the UK, he says.

Milner warns potential dealers not to treat the new scheme as an easy picking, with the prospect of avoiding the usual commercial risks.

"It's not going to be easy to become a DG dealer," he says. "We are not intending to go out and sign up as many dealers as possible."

MILNER . . . *"Not easy to become a DG dealer."*

DG at present has about 70 main line OEMs selling its minicomputers. These OEMs could qualify to become dealers for the micros under the new scheme, but they will not be given preferential treatment, says Milner.

There are four models in the Desktop range, the models 20 and 30 driven by DG's own microEclipse chips and, of more interest to dealers, the models 10 and 10SP which are dual processor machines with the Intel 8086 and the microEclipse.

£250,000 cash for chip connector

A UK firm, Ultra Electronic Components, is out to change the face of basic computer building blocks. It has invested £250,000 in research on the Chip Rack, a compact chip connecting system developed by Dave Brown and Mike Ansley, partners in Wokingham-based ICDC. Prototype applications will appear early in 1984.

But an approach by Brown to the British Technology Group for funding the project got nowhere. Brown was told more development was needed.

The idea is to do away with all the leads of conventional circuit boards and lay out the chips in carriers with conductive strips linking each chip. The carriers are double-sided and mounted in racks to give a three-dimensional structure which offers vast potential performance improvements.

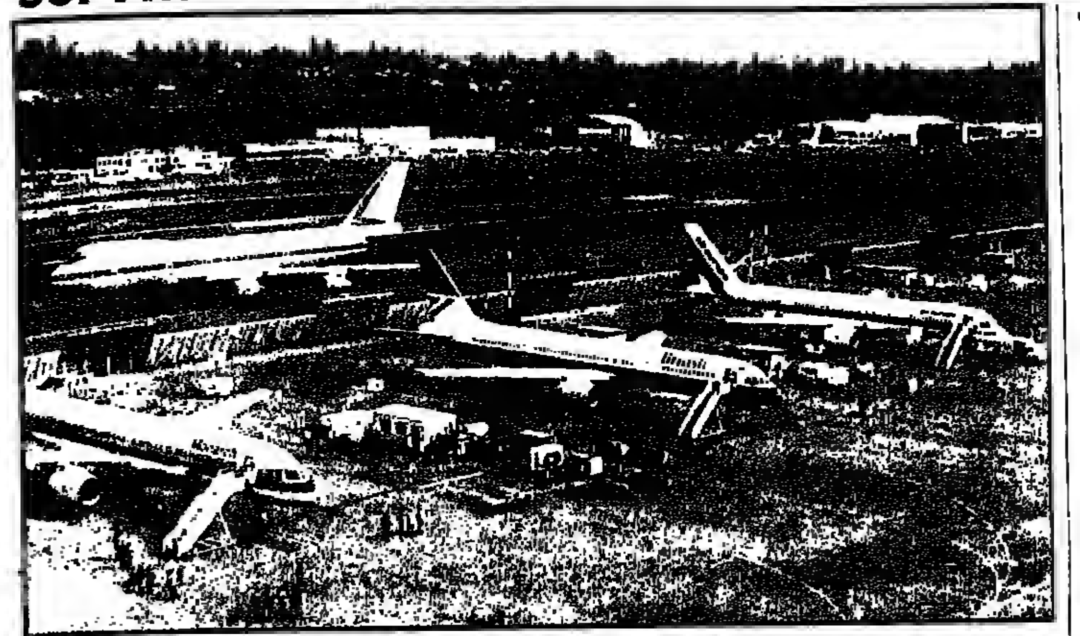
PC clones for £1,000 in UK

CLONES of the IBM Personal Computer could become available for about £1,000 following the launch in the UK of an IBM-compatible board based around the Intel 8088 processor. The board, made by Faraday Electronics of Palo Alto, California, is being marketed to OEMs in the UK by Micro Marketing Electronics (MME) at a single unit price of £500.

MME says it should be possible for an OEM to add a keyboard, monitor, disc drive and power supply for another £500 to yield an IBM PC work-alike for £1,000.

But the company thinks the main market for this naked PC will be in industrial control rather than in building PCs. "There are enough IBM compatible machines already," says MME sales and marketing manager John Henin.

SOFTWARE FILE



Boeing Computer Services, part of the jet engine maker, is moving into new markets.

Boeing migrates to micro packages with PC suite

BOEING Computer Services, the jet engine maker's subsidiary, is going into package micro software.

Its announcement of a range of products for the IBM-PC marks the latest step in the migration of bureaux and consultancy firms towards newer and more fertile markets. Boeing's engineering and IBM services have continued to prosper, but its traditional timesharing operating has been in decline, as the cost arguments in favour of in-house systems have become overwhelming.

Now the Boeing services company's European arm, based at Watford, has brought over to the UK marketplace a suite developed at its Seattle headquarters claimed to be the most comprehensive and flexible yet offered for the PC.

It originated with a brief to the computing arm by Boeing top management in the late 1970s to put some order into the spreading anarchy of IBM and Univac mainframes, DEC minis and newly-emerging micros.

They then standardised on the UCSD p-code portable operating system and developed their own version of it called BITS, or Boeing Intelligent Terminal System.

From this came the new family of software for various scientific, commercial and engineering tasks.

Manager George Macleod is particularly proud of its relational database and its computer-based instrumentation system. It has been sold in the US on a number of micros, including DEC, Xerox and Onyx, but here is only to be made available on IBM-PCs.

Macleod thinks the main appeal will be to large companies prepared to spend money to gain a standard as Boeing has, rather than to small businesses.

"It's these big companies which have the problem with IBM-PCs springing up everywhere, and the DP manager trying to get his arms round the situation," said Macleod.

TEBBUTT . . . *"It helps you gather your wits."*

Brainstorm in ideas processing

IF artificial intelligence is the London to Manchester road, Caxton Software has reached Harrow – or maybe Watford. So says director David Tebbutt, making only modest claims for his Brainstorm package launched last week.

He devised it to help himself in making jottings and then be able to review his notes in comprehensible form.

"It helps you gather your wits, however diffusely you may have put things down," he said.

"With the aid of freelance programmer Mike Liardet – formerly of Edinburgh University AI department and one of the devisers of Caxton's Optimiser software – he turned the machine code he has used himself into a package for the commercial world. The first version runs on any micro supporting the CP/M operating system.

"We think it should allow any manager or systems designer to get his head around a subject. We've shown our faith in it by giving it to our sister company Digitus, which has been using it successfully."

Tebbutt said he had set out with the academic intention of writing a program to mimic the workings of the human brain, but admitted he has not got far. Then he decided it was useful enough as it was ...

Compiler provides DEC-DG portability

A BRIDGE between DEC and Data General hardware has been devised by a small London specialist programming house with big commercial ambitions.

It is a compiler for DEC PDP-11 minis and Professional micros which takes Data General CS Cobol source code and generates DEC object code.

The author is Tony Sale, chairman of the British Computer Society's Cobol group, who has developed the compiler for Angus Glow, a five-year-old systems outfit.

The impetus came from Information Access Inc in Ohio, which wanted to port one of its successful applications running at 400 Data General sites on to DEC equipment, as it had just become a DEC OEM. Re-writing the application into DEC Cobol or Basic would have proved a massive task.

"We have created a tool that gives portability between DEC and DG and should be invaluable in allowing authors to sell the same software for both ranges of machinery," said Angus' marketing director Leo Scheiner. "We don't know of any similar aid in existence."

Scheiner thinks the system could be a big boost for the Professional micro, which despite its high reputation for power still has relatively few applications available. DG suites could now be simply recompiled to run on the Professional he said.

Concurrent windows

VERSION 3.1 of Digital Research's Concurrent CP/M operating system, due for release in March, is to have windowing capacity.

The upgrade, announced at the Comdex show in Las Vegas last week and simultaneously in the UK, pushes the system into the field of multi-user networking.

The windowing technique lets users see four applications executing at once. Digital's European operations manager Paul Bailey said this was not the same as VIP, the Visual Information Processor, previewed in *CW* on August 18. But it could complement VIP.

Software File is compiled by George Black

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Users give IBM a low software rating

by Phillip Hunter

IBM has a low rating as a software supplier among its users. It has come last but one out of 21 major suppliers on value for money, and last but two on quality, in a survey* of 163 IBM mainframe sites in the UK.

This view is confirmed by John Grant, chairman of the IBM Computer Users' Association. But he added: "We are expecting IBM to be more competitive than at the moment."

Grant says the CUA is concerned about IBM's recent move to start charging users for upgrades of existing IBM software.

"We are not opposed to an upgrade charge as such," he says, "but we need to monitor the amount carefully."

Users renting software should expect a discount if they have to pay for upgrades, he adds.

But the poor reputation of IBM software does not stop users buying it. More than half of the software budget was spent with IBM at 151 of the 163 sites in the survey; the average was about 75%.

The main reason given for preferring IBM software was fear about future compatibility.

IBM's increasing refusal to publish source code was having the intended effect of preventing independent suppliers keeping their code compatible with IBM's. Users in the survey said they were worried that IBM's policy of not publishing source code would hurt the UK's independent software suppliers.

But Grant is sympathetic with IBM's position on software source code. "There was a lot of copying of IBM software," he says.

Compute of Bridgend is the software supplier offering best value for money, and is third best for quality, according to the survey.

*The Xephon Market Survey Systems Software: Acquisition and Usage, from Xephon of Newbury, Berkshire. £29 (£27.50 for orders with payment).

GRANT . . . *"We are expecting IBM to be more competitive."*

Bank silent on 'sell-off' in Ulster

SUGGESTIONS of a proposed sale of three National Westminster subsidiaries, Software Ireland, Computer Maintenance Ireland and ICS Computing, to Northern Ireland corporation Lamont, was met with a firm "no comment" by the parties involved this week.

Range complete

TETRA Business Systems of High Wycombe has completed its range of commercial applications for the Unix operating environment, says software director Sean Dowling. The Tetraplan suite, running on micros or minis, comprises accounting, order processing, invoice, sales analysis and stock control.

Prospero update

LONDON software house Prospero has re-written its 8-bit Pascal compiler for 16-bit machines. The new 16-bit version, aimed at MS-DOS operating systems micros, is compatible with its predecessor running under CP/M, says Prospero director Mike Oakes.

Planning system

MANAGEMENT consultant Deloitte, Haskins and Sells has developed a planning package for manufacturing industry running on the IBM-PC, called CostPlan. It began as a project for dyers Cawley, of the Rexmore Group, for its annual budgeting.

Housing match

LONDON systems house Fraser Williams has extended its estate agency software range with a set of programs to match applicants to properties available. Fraser Williams has over 40 installations of the suite in the UK abroad, running on Data General hardware.

Until now, finding out about home computers was about as simple as

focusing your right eye here **and your left eye here.**

Mind boggling isn't it! But now there's Computer Choice, a new monthly magazine that gives you the facts and advice you need to choose your first home computer.

And when you've bought your computer, it also helps you get the most out of it.

The first issue is out now, for 60p and includes our

special Buyers Guide on micros under £200, a comparison of the Oric, Spectrum and Sord and a report on what Oric owners like and dislike about their computers and software.

As well as an article on how to learn Basic and reviews of all the latest games and software. Plus lots more to make choosing a computer easy. And owning one fun.

PROFILE

Boss who understands the problems of users

FRANK WALTERS, managing director of Harris Corporation's UK operations, appreciates the typical problems that users have. He also understands field engineering, hardware, software and running small and large companies.

Over the last 27 years Walters has had experience in all those areas, which he believes is now standing him in good stead as Harris Corp adopts an increasingly visible profile.

by John Riley

WALTERS . . . "There was more mystique in those days."

After leaving national service in 1956, he joined Joe Lyons as a computer systems field engineer. "That was in the days of mercury delay lines, radio valves, 150 milliseconds access, and so on," he reflects.

After about four years there, he moved to become one of Honeywell UK's first five field engineers. "We worked with the 400 and 800 machines," he says, "and there was more mystique about computing in those days – including the white coats."

While at Honeywell he moved over to software – "tinkering around with programs" – before leaving in 1965 to become DP manager of Standard Telephone and Cables' telephone switching group.

"I went there for three months and stayed for five years," he says. It was there that he experienced the industry as a user. "It's easy to be myopic if you've never been a user," he says, "getting the work out and the job done on time, with people unsympathetic to hardware and software problems."

In 1969 he went back to Honeywell. As STC was a large Honeywell user he found that he had not lost touch, and went into selling in the North-west.

By the end of 1972 he had found it time to move on. "A problem of large companies is that they want to influence decisions and I wanted to be my own master," he says.

He moved from there to Facit Data Solve and into the small business systems market. "That was a different marketplace," he says, "dealing with a wide range of customers from greengrocers to medium sized companies."

After a spell there, he moved across the market to minicomputer manufacturer Varian Associates as UK general manager.

"At Varian I felt more in control of my own destiny", he says. But when Varian was bought out in the summer of 1977 by Sperry, Walters found himself back where he had started – in a large company – so after six months as Sperry's UK minicomputer sales director, he left to become managing director of mini manufacturer General Automation.

"People don't realise that there are problems when a smaller organisation is taken over by a larger one. The smaller company usually slots in lower down. Varian had 30 staff, and it was traumatic when it was taken over – it was hardly a pin-prick in the larger corporation," he explains.

Walters is conscious of the problems of other companies that he has seen taken over in his career which have "nearly died in the dichotomy of interest between those who take over and those who control them".

He emphasises that Harris understands this problem, and explains that after Harris took over the communications company, Farinon, in 1980 it remained a separate company for a year or so, "until they got to know each other." He adds: "Then we split it up. When you take over a small company it feels very insecure."

He points out that there are also problems when equal sized companies merge. "Of course, when two large companies merge, then you get a power play problem."

After nearly three years at General Automation, during which time he became joint manager of European operations, Walters was approached by Harris and became its UK general manager, international division.

"Harris appealed because as well as being a $1.7 billion company, it covers a lot of areas – satellites, distributed data processing, semiconductors and terminals – and I felt I could grow inside it."

Harris aims at larger users, starting with the 30-40 terminal users upwards. "The Harris approach is to have tremendous rapport with large IBM users," he says, "and we sell plug-compatible equipment to them.

"We're very fortunate in the industry to have a large umbrella organisation like IBM. It takes 70% of the world market, which gives you a de facto standard."

Walters believes that the main thrust of the future has to come through marketing. That is one reason why Harris has taken over the word processing and micro manufacturer, Lanier, which is to be left intact as a separate section of Harris. It has a widespread marketing organisation.

"The hardware is easy," says Walters, "but people are the problem. Anyone can cobble together a chip and memory – but then you have to sell it."

DOWNTIME

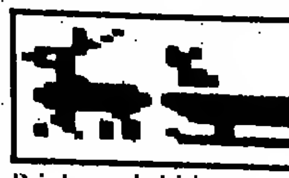
Spirit of Christmas goes graphic

A CALL to all despisers of commercialised Christmases: if you have tears to shed, prepare to shed them now. Who would have thought that after 2,000 years of man's insatiable desire to make a bit on the side, there could be any remaining festive horrors lying in wait to pounce?

But of course there is. And it comes to you courtesy of the BBC Micro.

Owners of the BBC Model B can now buy computer Christmas cards. The maker's publicity blurb sets the scene:

"Imagine the family's delight to find an animated seasonal greeting on your television screen. An exciting addition to the usual Christmas decorations. Three fully-animated cards in colour with excellent festive music."



Reindeer and sleigh.

And so it goes on. I for one intend to eschew all puerile attempts to detract from the true spirit of Christmas and will instead pursue the more traditional means of celebration – overeating and drinking.

Computerspeak is riddling the language

THE world and this page revolt against the misuse of language by the industry. As an example I shall quote from a marketing brochure that recently crossed this desk.

The booklet described a "cost effective reach" of a certain market sector. Rather horrid, I thought, even if it was marketing slang. Is it? (Answers on the usual postcard.)

But little did I suspect, on returning from holiday, that British Rail would be afflicted with a similar malady. Shortly before my train arrived at King's Cross a voice emanated from the ether; "Would passengers please ensure that they have all their belongings before detraining." Yuk.

Buzzwords are getting out of proportion, too. One I often hear is "upwards compatible". So it was with some interest that I read about one particular disc controller.

This controller was a shining example, said the brochure, of "the yellow brick road concept of upwards compatibility".

Well, I'm the Wizard of Oz and Judy Garland's our systems analyst.

Taxing time

WHO said computers have no sense of humour? Me, probably. But there is hope. One of our metal chums, currently employed by the NatWest Bank, sent one of its customers a statement detailing the activities of his account.

Against an entry recording a transaction with the taxman, it added the phrase "Inland Revenge".

Chad

PLATFORM

Peter Curtis is executive director of Data Training.

Training suppliers should make the choices

A RECENT article by George Black (*Computer Weekly*, November 10) made public major elements of dissent between the controlling body and the public and private suppliers of training, leading to the industry recognised National Computing Centre certificate.

Currently about 1,000 analysts gain the qualification annually. Data Training is a major supplier, with a significant 180-200 attending scheduled courses each year. From this platform we are in a position to speak with authority for the suppliers.

There is to be a new examination syllabus concentrating on structured analysis and design replacing totally conventional systems development techniques within 12 months.

However, this decision preempts meaningful discussion with the suppliers and imposes an industry standard, market requirements and a required timescale without consultation.

The "row" started at a meeting called by the NCC and attended by training suppliers. Most suppliers attended, having erroneously interpreted that suppliers' views would be encouraged. The meeting, however, presented the syllabus as a fait accompli, and challenges arising from the floor were neither welcomed nor considered.

The major objections raised at the meeting were the absence of a proper investigation of market requirements to establish user acceptance of the structured technology, and the optimum timescale for introducing it as a standard; the many variations of the structured approach – the recommended standard has not been defined and the associated course material has not been made available for scrutiny by the suppliers; the arbitrary timescale for the implementation of the new syllabus; that there should be the option to continue traditional examinations; that structured methods have not yet been accepted by most large commercial users as the intended approach to systems analysis and design; and the presentation of a decision to suppliers without consultation.

The introduction of the syllabus and material for teaching systems analysis and design in the late 1960s has often been described as the most valuable NCC contribution to our industry. Standards were defined for carrying out activities involved in analysis and design, where there were virtually none, and a designed training produced for the specific use of organisations wishing to provide formal training to new (and sometimes very experienced) analysts.

There was also an examination structure that could be meaningful to employers and would monitor the effectiveness of the presenters.

It is inconceivable that the thousands of users who have spent the last decade establishing systems analysis and design working practices based on the traditional NCC approach will make the transition to the new methods by December 1984.

In the meantime, there will be a continuing requirement for ... and replacement analysts ... thoroughly in the established traditional methods.

The half-way house solution ... presenting sessions on structured methods as introductory elements while practical work is carried ... to conventional standards – suggested by the Systems Analysis Examination Board – is ... cal.

Data Training currently ... structured systems analysis ... design (SSAD) to complement basic skills, but certainly not instead of them, nor to be used in isolation.

Heaven help the poor analyst who return from SSAD courses alone into traditionally organised departments. Having thoroughly learned co-ordinated, consistent structured methods leading to validated result, they will find that these do not integrate with existing team practices.

However, it is only fair to say that the tools of SSAD have evolved over past years at different speeds and from different sources. In consequence, there is still considerable variance in the relative importance attached to the various elements, and there are great discrepancies in the methodologies being proposed.

If the final standard settled by the examination board pulls together the technology from the extreme views being advanced by a prolific special interest group,

Most suppliers recognise the advantages of the structured approach

then it will have provided a major service and accelerated the move to an industry standard.

Data Training is convinced that this general consensus is emerging and that a common, well defined logical process is being revealed. Only when the professional data processing departments commit themselves to these methods will they really start to produce the real management and user benefits associated with the procedures.

Although there is resistance to the introduction of the new syllabus, this is largely a question of definition and timescale. Most suppliers recognise the advantages of the structured approach.

The most apparent solution, and probably the easiest to implement, is for the board to extend the timescale for examining courses taught to traditional standards, allowing employers and suppliers to make the choice relevant to their working standards.

The larger suppliers will offer this choice of training immediately, and if the method proves as effective as claimed, then the process of natural selection will voluntarily achieve the result that the examining board seeks to impose on our industry.

Peter Curtis

10 YEARS AGO

FROM COMPUTER WEEKLY OF DECEMBER 6, 1973: Logica won a software development contract as part of the World Weather Watch system run by the Meteorological Organisation . . . Potter Instrument Co introduced a printer with 30% smaller characters in anticipation of international paper shortage . . . The kidney-matching service of the South-western Regional Hospital Board ... 1,000 kidneys from donors and matched them to potential recipients ... 22 months.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, December 8, 1983

The tests to come for ICL

ICL has come a long way since the dark days of 1981, and its 1983 results have rightly been welcomed. But with the imminent retirement of Sir Christophor Laidlaw, the company will come under sceptical scrutiny again.

Two years ago circumstances demanded that ICL set itself modest, but crucial, objectives. Putting profits before growth, the Laidlaw-Wilmot team proceeded to cut borrowings and streamline the business. The latest figures show that in these terms they have succeeded.

Yet the message from Putney last week was a cautious one. ICL is first to recognise that the real tests of winning credibility in world markets, and taking on a fiercely competitive IBM at home – particularly in public sector contracts – are still to come.

What both City and industry commentators fear is that two years of expediency, producing albeit creditable short-term results, will be at a cost of growth in the foreseeable future.

It is easy to kick ICL, and the boot went in firmly at the weekend. But the company remains our one native mainframe maker, and its fate is important to the UK computer industry as a whole.

Where ICL has made progress is in re-positioning itself down market. The Distributed Resource System products now constitute 20% of hardware shipments, and the range looks set to be a sound bread and butter product for the next couple of years. And the company still has faith in Perq, to the extent that it took an option on 16% of Perq Systems Corp in September.

So with IBM flirting with British Telecom, it looks as if ICL still has the hard work to do. Growth must now come from improved turnover, and winning business. All the cuts are made.

Michael Edwardes arrives as deputy chairman of the company on January 1. There seems to be no reason why he should not produce an effective partnership with Robb Wilmot, and his appointment seems to have given ICL managers no little confidence. He is likely to preside over no less fundamental a phase of ICL's recovery than did his predecessor.

Blandness as virtue

WHAT is probably the most important of the Alvey Programme strategy documents is published this week. Of the four enabling technologies – VLSI, man machine interface, knowledge-based systems and software engineering – chosen by Alvey for a five-year advance technology initiative, software engineering offers the greatest opportunities for the UK computer industry.

Alvey director Brian Oakley himself describes the document as appearing bland on the surface. And what is probably as important as what the strategy includes, is what is left out. Database development is one such area specifically cited by the report.

Blandness and lack of comprehensiveness must be seen as virtues in this case. The Alvey directorate is now getting down to serious business, and it is time for a practical, no-nonsense approach.

The directorate will no doubt be criticised by some for leaving out the particular areas the critics are working on. But as the strategy document says, the programme has finite resources, and these resources must be focused sharply where they will do most good.

Just how finite the resources are is brought into sharp relief when one looks at the budget: £65 million at 1983 prices for the five years of the software engineering project. The government share of that total is £38.3 million, which will be an extremely small price to pay if the programme comes anywhere near meeting its objectives.

Those concerned with the commercial aspect of Alvey will be glad to know that 30% of the budget will go towards exploitation. The directorate recognises that a key to the exploitation effort is the need to educate management that investment does pay off.

That may prove to be the most difficult job of all.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Ian Goodwill of Henley, Oxfordshire, who wins £5.

An operating system directs the flow of information from one part of the computer to another.

Fortune magazine.

LETTERS

Aim of the programmer

I WOULD like to endorse the views of Paul Higham (*Computer Weekly*, November 24) in that Trans-Basic may be compact but not exactly readable.

Going on to his comments, surely what is even more important is the efficiency of the program. I agree with Trans-Basic that less code in a program decreases the storage capacity for the source, but how about the overheads?

A small program is not necessarily the best, most efficient or the quickest program to run.

I would have thought that the aim of all programmers is to write an efficient program with emphasis on program clarity as well. What is the point of writing a program that is illegible, difficult to understand, and takes a lot of time to run?

How many times has a programmer picked up a piece of code for maintenance and spent hours laboriously constructing the logic and understanding what the program does? Quite often, I suspect.

BHARAT PORIA
Director
BCP Computer Consultants
Sutton, Surrey

An easy language

I MUST query Paul Higham's comment on the language Trans-Basic and the art of programming (*Computer Weekly* Letters, November 24). It appears that the whole point of the article has been missed.

The original article discussed the language Trans-Basic, culminating with a comparison with Cobol. The point made was that Trans-Basic is easier to learn, easier and faster to program in, and easier to debug than Cobol, while still remaining compact. The program featured in the article of November 10 was produced by a divisional manager who has done little programming in recent years and was new to the Trans-Basic language.

It is unfortunate that some academics today appear to equate "structured" with "good". As a realist, I believe that languages such as Trans-Basic fill an area where less qualified personnel can produce good, workable and maintainable programs. I am an ex-university lecturer and have been disappointed to see graduates reaching the culmination of their degree course believing that a program must be both structured and beautiful before it may be considered acceptable.

I would not like to be seen to decry a structured, logical approach to a problem, but would point out that a program does not have to be written in a "structured language" to be "structured".

I welcome the move to Trans-Basic as an attempt to remove the mystique of the black art of computer programming and enter a world where ordinary people can use a real time system such as Opus-1 and produce workable, maintainable programs.

RON BUSHELL
Computer Automation
Rickmansworth, Herts.

Mips, flops and bops

FURTHER to the discussion on mips and megaflops (*Computer Weekly*, November 24), those involved in image processing are often concerned with high throughput processors operating not on floating point data but on integer or (most frequently) byte data.

Hence megaflops (millions of floating point operations per second) are less relevant and a better unit is megabops (millions of byte operations per second).

In fact gigabop processors are already being built. Perhaps it only serves to demonstrate the impossibility of defining processor throughput with a single measure.

PAUL REDSTONE
Consultant
Aerospace Group
Logica
Cobham,
Surrey

Letter quality achieved with a single pass

CONGRATULATIONS on *Management Review*. It was high time the DP industry and senior management had a good, in-depth weekly product based magazine.

One small point: the article on printers, A Dull Necessity (November 10), stated that Triumph Adler's new printer, the HS400 needed to do four passes to generate letter quality print at 110 chps. This is incorrect. Letter quality is achieved with only one pass.

MAX HOTOPF
PR and advertising manager
Triumph Adler (UK)
London.

THE NEW 924.
THE TELEVIDEO SUCCESS STORY
(CONT'D).

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Telex: ...

TeleVideo Terminals

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PEOPLE

■ *EMPLOYEES at the New Southgate (North London) site of Standard Telephones and Cables were each to have received a gift from the company in celebration of STC's centenary this year. Instead, they chose to have the money, £25,000, used to buy an ophthalmic laser for the local Barnet General Hospital.* ***Lynne Hinde****, winner of the recent Miss STC New Southgate contest is seen handing a 3ft long replica of the cheque to the vice-chairman of Barnet Health Authority,* ***Alan Ray****.*

■ Ferranti Cetec has appointed two managers to the recently opened Wokingham office: **Edwin Roberts** to cover regional sales, and **Terry Gardiner** for export business development. Roberts was appointed in June to increase CAM-X exposure in the Southern region. He joined from Kongsberg Data Systems where he was product manager. Gardiner, who joined Ferranti in September, was previously marketing manager for McAuto (UK).

■ Prestel has strengthened its marketing team with appointments to two key positions. **Peter Bailey** is Prestel's new marketing manager, residential services. He comes from the record industry where he held marketing, sales and commercial management positions with three market leaders. **Jim Odell**, 34, is marketing manager, business services. He joins from the computer services industry, having held senior sales and marketing management positions for UIS, P&O, ICL and Baric. While with ICL he was responsible for the development and marketing of Bulletin, ICL's viewdata system.

■ Tech-Nel Data Products the Banbury-based manufacturer of data communications management systems, has appointed **David Powell** as technical support manager. Before joining Tech-Nel Data, he spent five years as senior engineer with Racal Milgo, based in Birmingham.

■ **John Waugh**, (above) has joined Kennedy and Donkin Systems Control, the independent systems engineers in computing and control, as marketing manager. Waugh, who was formerly senior venture manager with Atkins Research and Development (part of the WS Atkins Group), has 10 years' experience in the marketing and application of high technology products and systems.

■ **David Lamb**, has joined BIS Applied Systems as director of sales and marketing, to develop customer relations. A chartered electrical engineer, Lamb has previously worked in government and manufacturing industry. He spent the last 10 years in management and marketing position in the computer services sector.

■ Hardcopy recording specialist Gould Bryans has set up its own direct selling operation in the North and has appointed **Dave Freeman** to lead the Northern operation covering Scotland and Ulster. With the title of Northern area sales engineer, he will be responsible for all aspects of recorder sales, including digital plotters as well as XY and galvanometric recorders in this area. Before joining Gould Bryans, Freeman was a sales engineer for machine tool and CAM products.

■ **Steve Hone** has joined MBS Personal Computers as a technical support specialist. He has spent the past 12 years in the RAF gaining experience on a variety of microprocessor-based systems used for flight simulation and communications.

■ Following the company's decision to expand in speech-related products, Cable and Wireless UK Services has appointed **Michael Anns** as product manager, speech-related products.

■ **Gary Wrenn** has joined Rediffusion Computers as a dealer sales manager covering the South of England. He will sell the Teleputer/3 business terminal. Previously he was with Compsk Computers 1981-1983 as sales director. **Colin Mayes**, who joined Rediffusion Computers as analyst/programmer in the Finance and DP department, has spent five years as systems analyst with Fisons and, prior to that, 16 years with British Relay as an analyst.

■ Icoma Computers of Stoke-on-Trent has appointed **Roland Bourne** to the new position of software sales manager. He has 14 years' experience with a major clearing bank, specialising in branch re-organisation and is a consultant on the applications of microcomputers in education, industry and commerce.

■ Two new senior sales engineering appointments are announced by Rifa. **William Chisholm** has responsibilities for Northern England and Scotland, and **Alan Walker's** area covers Southern England. Both join from STC where they were product sales engineers.

■ **Geoff Cox** has been appointed finance director of systems house Software Sciences, which he joined in 1980 and, as group chief accountant, was responsible for financial accounting.

■ Mini/micro software specialist Duncan Bransom Office Systems has appointed **Tony Hughes** development and support manager, responsible for sale support and the direction of the company's team of systems analysts and programmers. A new recruit to this team is **Carole Brown**, who joins as an analyst/programmer. Hughes was previously employed as a consultant analyst by Duncan Branson Software Systems, the City-based sister-company specialising in the IBM mainframe market and was formerly with Amida Systems.

■ Dicoll Datasystems of Basingstoke, has announced two appointments to the board. **Harry Duesbury** has joined as sales director, and **John Bowers** has been appointed technical director. Duesbury trained as a computer engineer with ICT before moving to Univac on computer system sales. Joining Techexport as European manager, he founded Techex and was the first managing director. Prior to joining Dicoll Datasystems he was for several years in the marine electronics industry, holding the position of sales director. Bowers was a computer engineer for several years with AEI and Honeywell, where he became project manager. Before moving to Dicoll Datasystems he founded Comco.

■ **John Langdon** is now commercial director of Scicon. He has been with the company for four years, most recently as group controller of Scicon International.

■ **Fred Humphreys** (above), has been appointed director of sales at AES Data (UK), strengthening the company's top management team and reflecting AES' continuing development in the office automation market.

■ ***Ian Williams*** *(above) has been appointed sales marketing director of Paxton Computers which earlier this year became part of Star Computer Group. He joins Paxton from Star and in his new role will be responsible for bringing the Paxton Business Desk suite of microcomputer based applications packages to a wider market.*

■ Leading APL consultant Cocking and Drury has appointed **Dinos Appla** (above) as a senior consultant. Appla graduated from Oxford University with an honours degree in mathematics. For five years, he worked as a maths lecturer at the University of the West Indies. For the next five years, he worked for I. P. Sharp Associates, where he managed its Bristol office.

■ Percom, a software company which recently attracted funds of nearly £500,000 largely through funding from the NCC and ITTG, has announced its senior management team for the marketing and further development of its micro-based personnel management systems. **Richard Coon**, the managing director, in 1981 set up RDL Associates, a business start-up consultancy, and since then has been involved in a number of major projects for Rank Xerox including the formation of Xanadu, an association for the self-employed businessman. **Geoff Lancashire**, technical director, was previously with Rank Xerox as information systems manager **John Angel**, marketing director, is a solicitor and prior to forming Percom, acted as a consultant to Industrial Relations Services.

■ Scan-Optics of Sunbury, Middlesex, has appointed **John Woods** as director and general manager. He was previously international sales manager for Computer Automation.

■ Prime Computer has appointed a new sales executive to its Public Services and South-west district. **Jim Kirby** will be based in Prime's offices in Feltham, responsible for sales to specific organisations within the South region. These include British Gas, London Transport, British Rail, British Steel and the Independent Broadcasting Authority. Kirby has joined Prime from Comeurop (UK) where, as sales manager he had sole responsibility for the UK office and set up a number of marketing operations for the French-based company.

■ Interactive Data Machines has appointed **Peter Carroll** as systems support manager. Before joining IDM in July he worked for Nixdorf Data as North public sector branch support manager for two years. Prior to this he spent five years with Leyland Vehicles where he was a senior programmer.

■ Following the re-organisation of its corporate structure earlier this year, Engineering Computer Services of Tamworth, Staffs, announces that **Trevor Kitson** assumes total responsibility for ECS Microsystems in addition to his duties as director and general manager of ECS Graftek.

■ See of Livingston, West Lothian, has appointed **Douglas** [illegible] as sales manager. He joins from Newbury Data Recording where he started four-and-a-half years ago as a sales/service engineer and advanced to regional sales manager.

■ **Arthur L. Wells** (above) has joined computer-aided maintenance management specialists Comac Systems as a director with special responsibility for the company's newly established consultancy and training division.

■ **Gordon Kenneth** of Oakland Management Holdings has joined his colleague **Richard Carver**, as a member of the board of Beale Electronics Systems. **Roger Keeley** has been appointed operations manager, responsible for the overall engineering, production and consultancy activities of the company. Dr Keeley joins from GEC McMichael where he was computer services and digital systems manager.

■ Floating Point Systems has appointed **Alan Macdonald** as salesman for the North of England and Scotland.

DIARY

DECEMBER 8

IDMS and Data Dictionary. BCS Birmingham branch. Murray Kennedy, West Midlands Gas Board, Strathallan Hotel, Birmingham, 6.30pm.

Visit to Case new automated plant in Watford Business Park. BCS West Herts branch. Contact Peter Greatorex, 01-580 2355.

DECEMBER 12

Design of Database Controls. BCS Auditing by Computer Specialist Group, London Press Centre.

Introduction to dBase II. Ctec course, Clerkenwell Road, London EC1 centre. Details from Richard Lee on 01-251 4010.

The IBM Personal Computer. Visit to IBM Welwyn Garden City. BCS Bedfordshire branch. Contact W. R. Chianell, Ampthill 403431 ext 57.

Visit to Central Fire Station, Glasgow. BCS Glasgow branch. Contact J. C. Fleming, 041-886 4141, ext 162.

The DoI Office Automation Project. BCS Scottish WP&OA Group. Staff Club, University of Strathclyde, John Street, Glasgow. 6.30pm.

Computerised Office Control. Visit to Leeds City Police. BCS West Yorkshire branch. 6.00 for 6.30pm.

DECEMBER 12-14

The Information Centre: Implementation and Control. Mount Royal Hotel, London. £425 plus VAT. More details from Frost and Sullivan, 01-486 0334/5.

DECEMBER 13

The Milton Keynes IT Strategy. BCS Croydon branch. David Firnberg, BCS president. Maple Room, Fairfield Halls, Croydon. 7.15 for 7.30pm.

Bottoms on Seats. BCS Harlow branch. Peter Wellman, Tourism Technology. The Norfolk Room, Saxon Inn, Harlow, 7.30pm.

The Wang Approach to Office Automation. BCS Office Automation Group. 100 George Street, London, 6.00pm.

Data Privacy. BCS Reading branch. J. Kenny, BCS Privacy Committee. Small Physics Lecture Theatre, J. J. Thompson Building, Reading University. 8.00pm.

DECEMBER 14

Graphic Display Primitives. BCS Newcastle-upon-Tyne branch. Dr A. L. Thomas, Durham University. Ellison Building, Newcastle Polytechnic. 6.30pm.

Computing in Developing Countries. BCS North Staffs branch. J. L. Bogod, UK Council for Computing Development. Harding Room, Crown Hotel, Stone. 8.00pm.

Micromice lecture and demonstration BCS Teesside. Dave Woodfield, 1981 world champion with Thumper. Computer and Mathematical Sciences Building, Teesside Polytechnic, Middlesbrough. 7.30pm.

Viewdata System Vital. Visit to Talbot Motor Co. BCS Wolverhampton branch. Whitley, Coventry. 2pm. Contact Miss R. Nash, Computer Centre, Wolverhampton Polytechnic.

DECEMBER 15

Debate: The Computer Professional — RIP. BCS Guildford branch. Paddock Room, Green Man, Burnham, Guildford. 7.00pm.

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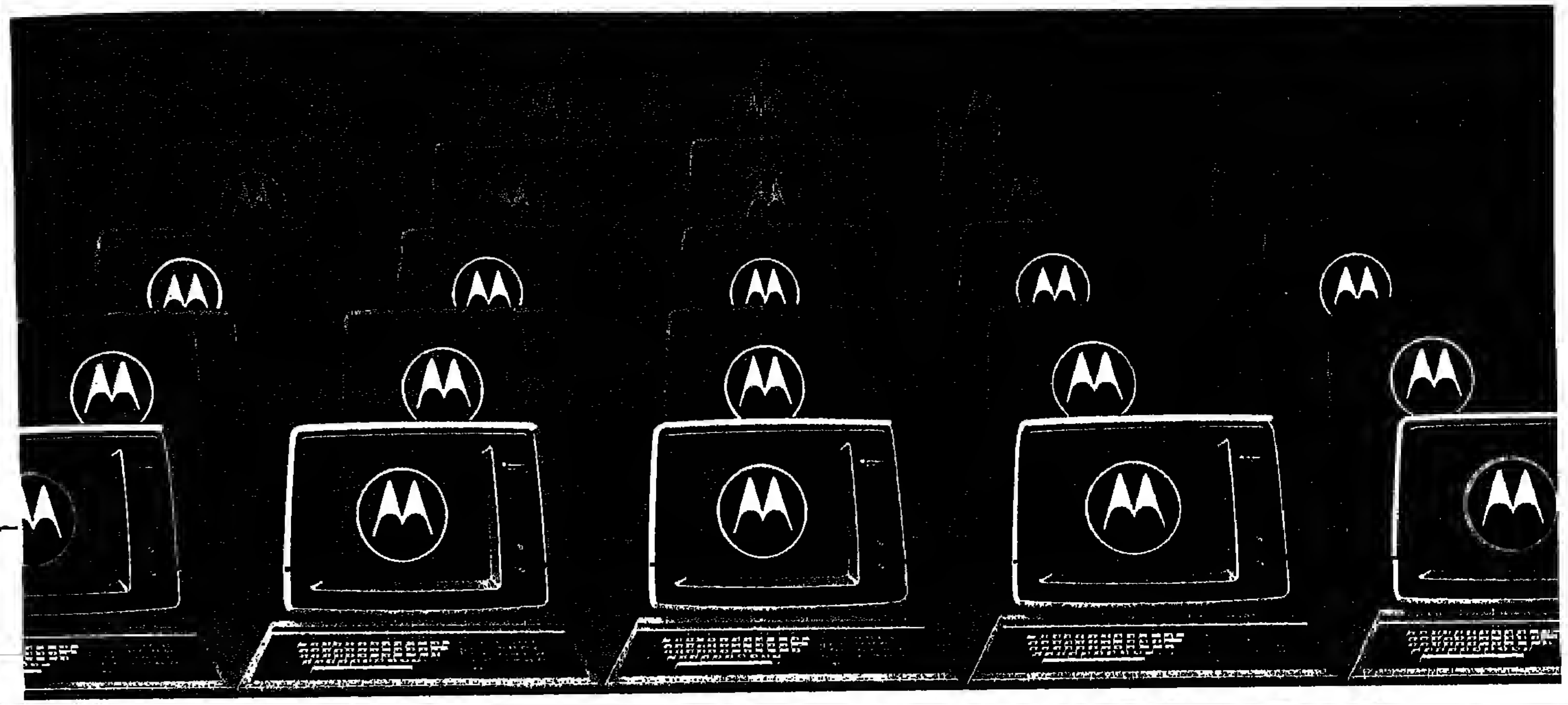


Motorola creates a new kind of office automation company

Motorola recently created the Motorola Information Systems Group by combining the skills of several companies. Among them were Four Phase Systems and Codex.

The result is a company that brings you complete systems capabilities; a single source for both processing and networking elements in the office environment.

This integration of computing and data communications capabilities provides many advantages.

Obviously, there is the convenience and efficiency of dealing with one vendor for all systems requirements.

But even more important is the opportunity to "custom-tailor" your systems to your specific needs, because of the very broad range of processing and communications products we have available. (Many of these have been productively at work in customer installations in Europe and around the world for years).

In addition, there is the flexibility of our networking capability which allows data from divergent types and makes of computers to be transported on one network.

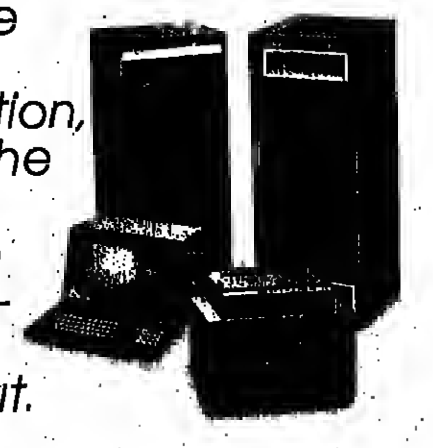
Motorola Information Systems Group represents a unique combination of skills, technologies and options for solving problems, now and tomorrow. Motorola, a world leader in electronics, provides support in terms of its size, global scope and financial resources.

And Motorola is no stranger to the worlds of information processing and data communications. The Motorola MC68000 microprocessor is the brain of some of the world's most widely respected microcomputers.

We also share a philosophy based on quality products that meet customer needs and exceed customer expectations.

We hope to prove that to you, soon.

For more information, call us, write us or visit the Motorola Information Systems displays at the upcoming office automation exhibitions. We have a lot to talk about.



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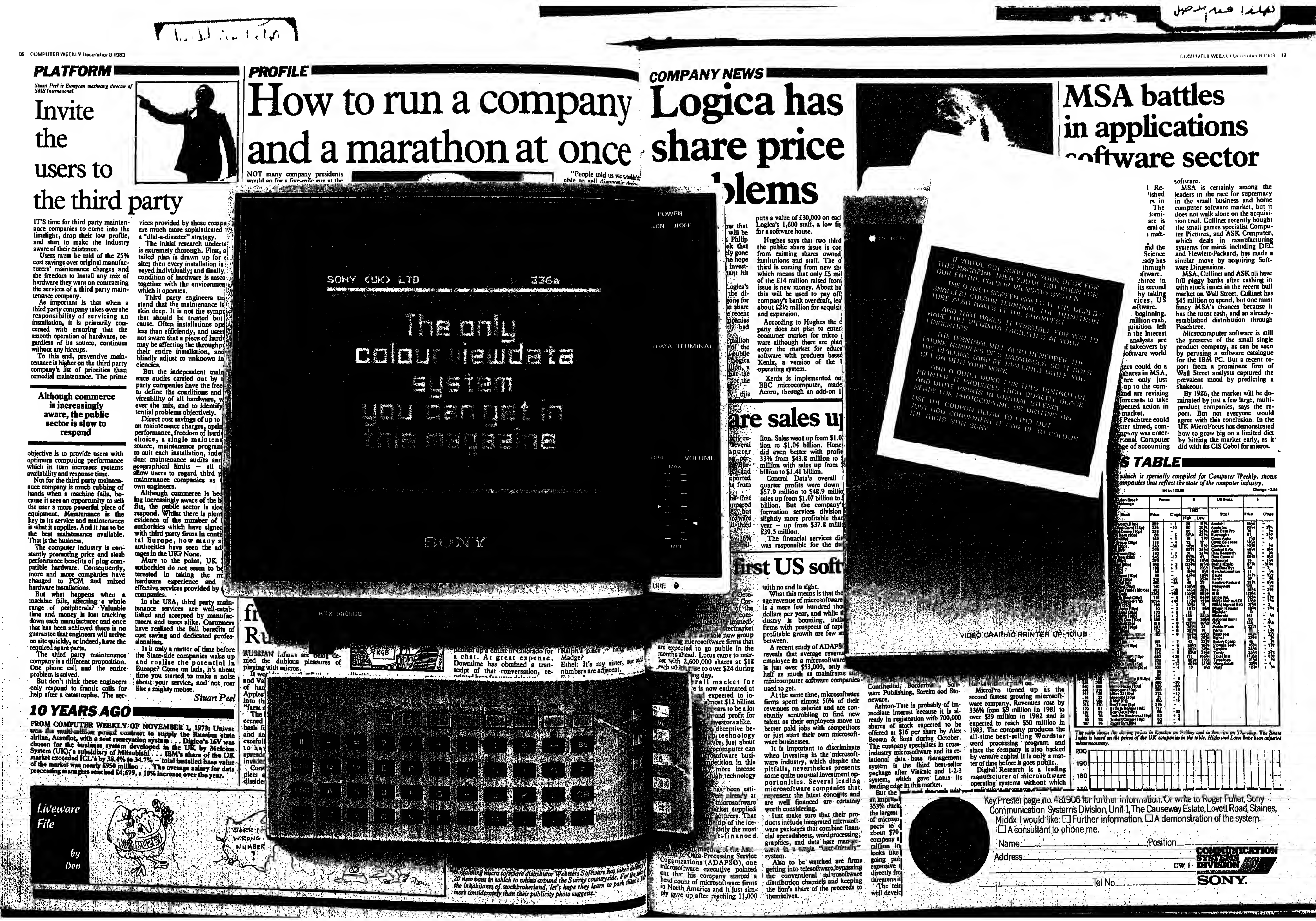
16 COMPUTER WEEKLY December 8 1983
PLATFORM
Invite the users to the third party
Although commerce is increasingly aware, the public sector is slow to respond
10 YEARS AGO
PROFILE
How to run a company and a marathon at once
COMPANY NEWS
Logica has share price problems
MSA battles in applications software sector
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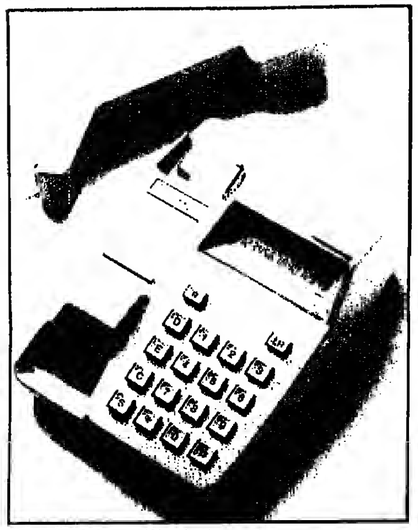


Transaction telephones could be valuable to retailers.

In August Gil Jones discussed in *Computer Weekly* the role of the new transaction telephones – or authorisation telephones as they are often called – in providing a convenient credit authorisation facility for retailers and others who handle credit transactions.

The article caused a good deal of controversy, with argument over whether transaction telephones indicate a significant development path towards more sophisticated payments handling, or whether they will get in the way of the main thrust of development towards full electronic funds transfer systems at the point of sale (EFT/PoS).

Here, Jones discusses the issue further and describes some new developments – including a device from British Telecom – which will make this approach even more attractive to the retail sector.

Credit to the retail sector – by phone

A GREAT deal has happened since my last article appeared – though so far I've managed to avoid actual bodily harm.

In August I described how transaction telephones work. I also identified the total potential market for them in the UK listed companies producing and marketing them, and argued that the transaction telephone represents a sensible step towards providing retailers with a valuable facility that is available now, rather than in several years, when the various bodies involved get their act together on EFTS.

There is no doubt that the banks, or at least some sections of banking, do not welcome the use of transaction telephones. They want to retain degrees of freedom with respect to developments in this whole area, and see the transaction telephone as potentially impinging upon this.

To be fair to them, they make a number of valid points in their arguments. Some of these we will touch upon later.

The problem, from the user's point of view, is that developments in EFTS in the UK have lain more or less dormant since the late 1970s, while the various interest groups have attempted to arrive at a consensus in areas such as systems specification, who pays, and data security.

In my opinion it will be 1986 before we see experimental EFT/PoS on any significant scale.

A number of recent developments are of considerable interest.

British Telecom Silver, in conjunction with Conidial, has developed a lower cost transaction telephone using voice response techniques. Checkphone was demonstrated for the first time at the Data Communications Strategy for Retailers conference, held this week by British Telecom/RMDP.

Data created in low volumes at a large number of widely dispersed locations has always posed a problem, in costs and logistics terms, with respect to its collection and processing. It is well known that in certain circumstances a satisfactory answer can be found using voice response systems.

Comdial, the American telephone communications corporation, has worked with British Telecom in the development of the Checkpoint system.

To keep the cost of the telephone down, it has no card wipe, the credit card number being entered through the keyboard. This is an obvious disadvantage in terms of transaction speed and data accuracy.

It works quite simply: the retailer enters the card number, followed by the expiry date, followed by the amount of the transaction. The card check computer responds using voice response to guide the retailer through these procedures and to give clear instructions in circumstances where the transaction cannot be authorised. The Checkphone is buffered, so that data can be checked before transmission.

Unlike transaction phones already in use, the Checkphone does not make separate calls to the different card issuer centres. It calls out, using multi-frequency tone signals over PSTN, to British Telecom's card check computer, where the calls are routed on using high speed communications (either PSS or leased lines) to the individual card issuer centres.

The first British Telecom card check centre is already open in London, and the system as a whole is about to be launched.

The telephone will cost £95 for the first year and £17.50 per quarter on a rental basis.

I said in August that, while the credit authorisation facility offered by transaction telephones is useful to retailers in certain circumstances – and there is undoubtedly a market for the devices on this basis – their real value to retailers will only be realised when it is possible to use them in a paperless mode. When transaction data is captured automatically, there will no longer be a need to fill in the five-part flimsy that is part of the current system.

This would have the effect of greatly speeding up credit card transactions. It would also improve data accuracy.

The banks' arguments against this are that it is vital that some audit trail exists for these transactions, and that this has an adverse effect on the cost of using the transaction telephone system.

At present it is possible to keep telephone costs for such a system down by referring only a relatively small percentage of calls to the credit card issuer's centre. The bulk of the calls are never actually made; the device provides a simulated authorisation code.

Because neither the retailer's checkout staff nor the customer is aware when a call is placed or otherwise, the system continues to provide higher levels of security against fraud than manual systems. But if it were necessary to capture all the transaction data, then, the banks argue, all calls would actually have to be made, thereby greatly increasing telephone charge calls.

They argue also that it is necessary for receipts to be printed for merchant and customer.

There are some interesting developments along this path. A small UK company has developed a standalone terminal that can provide these facilities, as well as faster credit check communications.

The terminal, which is at present in prototype form and, it is anticipated, will be marketed from around the middle of next year, has a card wipe facility, a printer and a display. It is capable of logging the credit card number and obtaining authorisation for the transaction, printing a receipt both for the merchant and for the customer and storing the details of the transaction on disc.

Clearance of the transactions through the card issuing companies would then be obtained by tape exchange using the BACS facilities (British Automated Clearance Services).

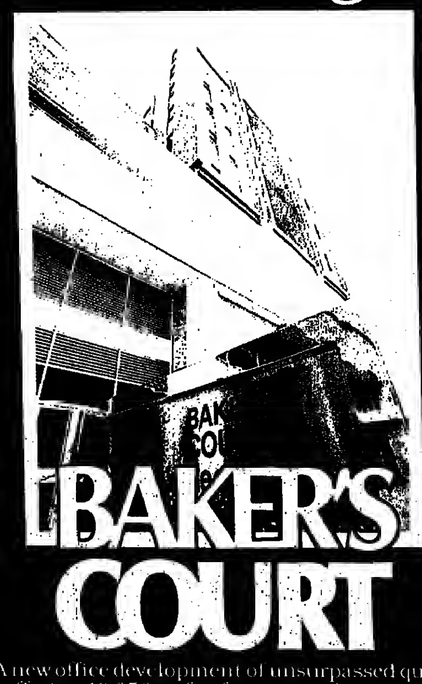
The terminal is also capable of providing management information, such as the breakdown of transactions by card type, by branch and by department.

It is also possible to obtain breakdown by merchandise item when an inventory code is being used in the store which the terminal is installed.

Therefore, moves are being made toward providing these valuable facilities for the retailer.

Gil Jones is a director of Retail Management Development Programme.

A New Outlook on Uxbridge



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WORKPLACE

In the first two articles of this series, we described a role for the data administrator and the factors which should be considered when choosing the tasks with which to start the data administration function. This week we consider the people who are required to staff the function and its place in the company hierarchy, and round off the series with a discussion of development once initial tasks have been successfully completed

The people who matter in the administration

Richard Heagerty and Terry Smith sort out the key people in the data administration function

FIRST the people. What people do you want in the data administration function?

The key person is the analyst. We are not referring specifically to a data or systems analyst, but the kind of person who will find out about a problem, and what is involved in solving it. He should be user-oriented, determined, yet not antagonise unnecessarily.

This role can be broken down further. You can have the analyst who is good at and deals with immediate day-to-day problems. You can also have the analyst who deals with long-term problems. Both are needed.

The function also needs a manager. This is someone who will ensure that the right managers are brought together, a decision is reached and followed through: Mr Fixit.

The manager's most useful qualification for the job is therefore an all-round knowledge of the business and its politics. It is advantageous if he has some experience of DP (particularly analysis) because he must learn its disciplines quickly if he has not.

To start with, the manager may also have to perform the role of the analyst. As soon as success justifies a bigger headcount, the analyst role needs to be assigned to someone else who can be relied on to keep out of office politics.

Thirdly, technical people may be required for various tasks. For example, when setting up a data dictionary, you need people with experience in using data dictionaries and a broad understanding of the software environment in the organisation. It may be necessary to modify the methods used in the DP department to get the best out of the dictionary.

The technicians assigned to work in data administration therefore need good technical and communication skills in order to get their peers to change their methods.

The important thing, we believe, is to ensure that one has the right analyst and management support in the function.

Most functions would probably claim the best staff should be assigned to them. This is certainly true of data administration if it is to succeed (and if not, why bother?). It is a small group needing a wide range of knowledge and skills and hoping to influence many parts of the organisation.

It is therefore no place for under-achievers or trainees. We are not going to talk about numbers, which obviously depend on the specific task – but we would recommend starting small and growing slowly.

Who should the data administrator report to? A lot of people say he must be outside the DP function – preferably reporting directly to the board.

There is one company where, because of a scattered DP function and because there was a particularly strong individual outside DP reporting as an adviser to the board, we recommended that the data administrator report to him.

But in many situations, at least for the first phase, it would be unworkable for the data administrator to be outside the DP function. He would be too far removed from where the problems are – and too far out on a limb as far as effective support is concerned.

The key point is that the right reporting structure falls out of analysing the organisational nature of the problem, and in deciding how much management commitment is necessary and feasible. That pretty well decides to whom and at what level the data administrator should report, ie to the person who will give him the necessary support.

The main possibilities are: Within the DP department (possibly directly to the DP manager or next level down); managers outside the DP department where there is strong support for data administration; or to the project manager in a major project (eg the company MIS).

Let's assume that the first phase has gone OK – you have set up the data dictionary, or sorted out how to define data between the different parts of the company. You have built the system using tight controls; or, after five years, got a data dictionary and all the systems on the data dictionary.

Assume that first phase has passed successfully, what do you do next? Obviously you go on to another task – having proved yourself once, you want to carry on to the next step. So for the second phase, as for the first phase, you need to find a new problem, look at what is feasible, look at what support is likely to be available, then select the task.

Support should now be greater, because you have proved yourself. It would make sense to capitalise on this support and select a task that partly involves people won over during the previous task.

But it is necessary also to advance the long-term aim of a data administration function. The tendency when the first phase has been completed is for management to say "Good – you've done a great job" – then they throw the baby away and build the bathwater into the system.

In carrying out that first phase a lot of thought has gone into analysing the problem, lots of people have been talked to, a lot of effort has gone into getting people together to come to a decision and get things working.

The trouble is that people see that as incidental and the resulting data dictionary, use of data analysis or whatever is seen as the thing that matters. That is what we believe to be wrong.

Clearly, the result of the first task – introduction of data analysis change control, data reconciliation process, information centre or data dictionary – is important and needs to be expanded, strengthened and built on. But that by itself will only meet at most a few of the data related problems. Many problems remain that can only partly be met by the tool or technique that has been introduced or developed. Furthermore, new problems will continue to arise. Some will have external causes such as changes in the company's organisation or markets. Others will be caused by the very success of data administration and the changed perceptions it gives.

The most important thing is to preserve the process of identifying and analysing that data problem crossing the organisation boundaries. However, you cannot sell that as a concept by itself. It is necessary to prove it by applying it to concrete tasks.

The trick is to make sure you do prove it and carry on with it rather than just getting bogged down into the specific task that has been developed. It is important to preserve the method of tackling the problems, not just the results.

How this long-term aim is furthered will depend very much on the precise company situation. Some pointers are: Try to get an increasing planning role in subsequent tasks; try to get the co-operation required between senior managers built into ad hoc or standing committees perhaps with the data administrator as secretary; consider changing the reporting structure; have the investigatory role built into the job specification.

Education of relevant management is important here – and it is doubly important that the data administration managers and personnel themselves have a clear understanding of the long-term objectives.

The next recommendation is probably going to hurt. Push back responsibilities to other functions. If you have built the data dictionary, consider handing over most of that to the DP and other functions.

"But we are the best people, we built it up, we ought to run all of it". There are two reasons why that is a mistake. First, people will soon see that what you are doing is building empires. You are a very small fish in a very large sea. You might be quite big now in DP, but there are line managers out there and if you are perceived to be merely building an empire then the next phase is going to be much harder.

But there is another reason. If you push back as much of the task as you can to within the DP and elsewhere, what are you left with? The thing you can not give back is that kernel of activity that crosses the organisation boundaries. You cannot give it back, because there is no-one to give it to. It is natural then to build on the cross-boundary problems and to develop data administration.

Thus, if you have piloted the use of data analysis, it could well now be that data analysis should be passed to the systems development section. You may keep responsibility for training, and for the standards for data analysis, and for where difficulties arise. So now you have time (and support) to consider remaining data analysis problems, and to deal with other data problems – instead of spending all your time and effort fighting your corner against the systems development manager.

Or to put it another way, develop as a service, not as an empire. If you are providing a service people will co-operate – and co-operation is vital to the process of setting up the data administration function.

If you develop as an empire, gradually people will close up. Thus you may win a small empire, but you will lose a great opportunity.

Thus, briefly, is how we believe you should set up a data administration function.

To sum up, we make four key points:

First, much or most data administration is not done by the data administrator or his group. Once you understand this point, then much else in setting up a data administration function becomes much clearer, and tends to fall into place naturally.

Second the data administration function should be based on data problems, not on techniques and tools. The data administrator is there to identify and to analyse problems, not as the person who looks after the data dictionary or sets up data analysis. He may well actually do these, but they are a means to an end, not an end in themselves.

Thirdly, base the first phase of setting up data administration on perceived problems in the company, on the degree of management support that is possible. You can only get so much. Go and ask for it, do everything you can to get it, but there is only so much support you will be able to get, and a limited time before results are required. Therefore, set up the first phase so that there is a reasonable chance of success.

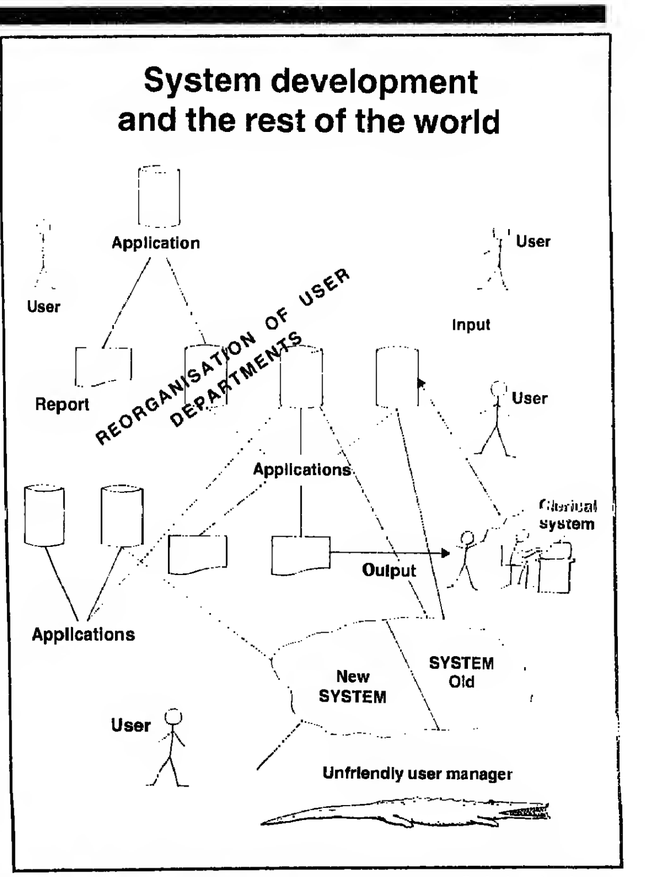
Lastly, build from the first phase to achieve a function responsible for identifying new, changed or unsolved data problems and for pursuing these problems. Don't get sucked in the particular role or task that is the first task. Generalise so that you become the function for data.

If this is done, then we believe there is a real chance that in a few years there will be data directors on the boards of a number of companies. The data administrator or manager will be there, not because he or some consultant have told the board that it is right.

He will be there because, over a period of time, he has proved so invaluable that his skills and knowledge are wanted on the board, by the other members of the board.

Richard Heagerty and Terry Smith are consultants in CACI's business information department.

Develop as a service, not as an empire. If you are providing a service people will co-operate – and co-operation is vital to setting up the data administration function. If you develop as an empire, gradually people will close up. Thus you may win an empire, but you will lose a great opportunity



PUZZLER

$X(1)+XXX(2)+XXX(3)=aa^2$
$X(1)+XXX(2)+XXX(4)=bb^2$
$X(1)+XXX(3)+XXX(4)=cc^2$
$XXX(2)+XXX(3)+XXX(4)=dd^2$

In this problem you are asked to find four different positive integers. As is indicated by the number of Xs, integer (1) has just one digit, while the other three integers have three digits each. The bracketed numerals have been inserted merely for the purposes of identification.

Each of the four equations totals to a different "two-digit integer squared". The letters aa, bb, cc and dd are again used merely for identification purposes – as, for example, does not necessarily mean that both digits involved are the same.

See page 61 for solution.

PERSONAL COMPUTERS

There is doubt as to when and by whom the term "personal computer" was first coined, but none as to how it obtained its dominance over the alternatives of micro, small business computer, and so on (writes Mike Blench, development director, LSI Computers). When IBM chose the term, everybody suddenly found it a great description.

Yet it illustrates a fundamental point. The typical personal computer is, in a phrase, too personal.

Few manufacturers have realised that for business use, no office equipment – and let's not get carried away, personal computers are just that – can be considered applicable only to an individual. Even the humble pencil gets handed around.

So-called personal computers are used in offices as word processors, to run accounts, to issue and control stock and generally either to emulate the work of their larger mini and mainframe brothers and sisters, or act as their intelligent terminals.

The usual form in which personal computers appear – screen on a processor box with disc drivers and a separate keyboard – has evolved as much from manufacturing expediency as user ergonomics.

The more a personal computer can be assembled from finished OEM sourced components, the easier it is to bring new designs to market. If the VDU, or processor or keyboard on your computer pops up in someone else's, don't be surprised – it is a compliment that at least two suppliers consider it a worthwhile peripheral.

But personal computers applied to the automation of all manner of imperaonal procedures have a delightful babit of suggesting to their users other work they could also improve. Stick a personal computer in as a stores control terminal and sooner or later the storesman will want to use it to keep track of returnable packaging or works vehicle drives.

It is then you realise the computer needs a little more memory or disc capacity, or it needs a back-up to a dumb terminal, or three of its own. It is then, also, that you realise the limitations of the average personal computer.

Truc, some are capable of multi-user operatioos, and bolt-on atorage can be bought. But it can get clumsy and slow and aomcone in the stores will now need a miniature course in computer operation.

Many micros, when their multi-terminal bluff is called, have such long responae timea that impatient users start thumping on keyboarda.

How the micro makers upset the Apple cart

John Cornwell takes a Personal look at the way the micro has soared in popularity since its birth in the 1970s

THE microcomputer industry had its origins in the 1970s in machines designed for the electronic hobbyist market in the US and, from those early days, three leading competitors emerged, of which Commodore and Apple were new, and Tandy was then, as now, a force to be reckoned with in consumer electronics and goods for electronic hobbyists.

These three companies set the pace in the microcomputer industry until late 1981 when, for the first time, other companies including IBM entered the microcomputer business and thus upset the status quo.

Nowadays, with microcomputer products coming from all sectors of the computer industry, the marketing situation has become somewhat clouded by the proliferation of outlets. Tandy, for example, sells direct to users via its own retail shops of which there are several thousand.

Manufacturers like Apple and Commodore, however, sell through specialised High Street retailers or via franchised electronic distributors – and, in some cases, will even use large chain stores or super stores as outlets. Others, like IBM, tend to use only franchised distribution sources.

What do these various outlets offer to the user? With a retail operation he will get good technical and other support, eg software and peripherals back-up on a specific product from well-identified and easily available sources.

CORNWELL . . . LAN growth."

The retail shops will also, in general, give good back-up – but often on specific or fairly limited ranges. The large stores, again, will offer limited choice and, for the moment at least, possibly limited back-up.

Officially franchised broadline microcomputer distributors should be able to offer wide choice and comprehensive support although, obviously, some may tend to take the specialist by manufacturer route. Their main problem, undoubtedly, will be in making sure the services they can offer are communicated properly to a market which may not be very aware – and even slightly suspicious – of such outlets.

At present, the UK is the largest European market for personal computers with almost half the total UK sales going to the south-east of England. This market is expected to grow despite a still rather sluggish economy and the relative lack of disposable income. Currently, in the UK alone, over 120 companies are supplying more than 250 different models.

The UK market can roughly be divided into three major sectors: the business/professional market, the home hobbyist market, and the analytical/scientific sector.

In terms of value, the business/professional market is the leading sector, worth over £160 million (including peripherals), that is about 46% of the total of the UK market value. This sector is dominated by Commodore, Apple, IBM, DEC, Wang and Sirius and 1982 estimates indicate that over 170,000 base units have been installed. Units shipped for this sector are estimated at 50,000 for 1982.

Tandy is one of many suppliers now selling via its own retail shops.

The home hobbyist market – the second largest in terms of value (£150 million including peripherals in 1982 and around 43% of the UK market value) – is dominated by Sinclair, Atari, Dragon, Oric, BBC/Acorn, and the Commodore Vic. This sector has by far the largest number of UK installed base units and number of units shipped, figures for 1982 being quoted at 600,000 and 383,000 respectively.

The smallest market sector (11% of the total UK market) is the analytic/scientific sector, where Hewlett-Packard predominates, representing a value of £40 million including peripherals. There are over 30,000 installed base units in the UK and more than 8,000 units were shipped in 1981.

There are already many significant trends for the future. Prominent among these is the increasing penetration of large manufacturers, such as IBM, DEC, and Wang, into the personal microcomputer industry. This is, in part, achieved by the takeover of smaller companies. Other large companies, including STC (STC Micros), Granada, Tesco and RHM, are now investing in personal computer distribution.

With possibly 20,000 or more IBM Personal Computers already in use throughout Europe, it would appear that this particular company has become the leading manufacturer in the business/professional sector. Leading manufacturers in the home hobbyist sector are expected to be Commodore, Atari and Sinclair although this is a volatile sector which can change very quickly.

As regards the non-European invasion, Japanese and US suppliers are finding the introduction of new products into European markets slow due to the difficulty they have in translating software and documentation, although the Japanese are making every effort to cure this problem.

Other trends for the future include the increasing use of A3 digital plotters which are needed to give graphics printout. This is an area where the Japanese are making headway as indicated, for example, by the recent introduction of the very advanced Iwatsu SR6602 low-cost, flat-bed intelligent plotter.

In addition, the future will see the growth of Local Area Network (LAN) technology with shared storage devices and peripherals; the use of personal computers with mainframes which will enable access to the mainframe together with local usage of the personal computer; access to remote data bases via o modem; and electronic mail.

John Cornwell is business manager of STC Instrument Services.

PERSONAL COMPUTERS

Robert Parry discusses what it will take for low-end microcomputer firms to survive the current price-cutting war

Who will the survivors be?

IT was a mixed micro year. It was the year of glamorous, long-awaited machines like Lisa; it was the year IBM forced its attentions down the personal computer scale with Junior and up with the 3270 PC and XT/370; it was the year that the new standard businessman's micro stopped being an eight-bit Z80 machine running CP/M and became a sort-of-16-bit machine running MS-DOS; it was the year that all these machines claimed IBM compatibility, portability, or both.

And it was the year that the gilt started to fall off the gingerbread. For in 1983 the troubles at the low end of the micro market, the viciously competitive consumer home computer arena, intensified.

Companies like Atari and Texas Instruments (TI) saw losses here stampede towards the million dollars a day mark. Price cutting to maintain market share raced on, driven by those like Commodore that could stand the pace while still turning in higher profits.

For TI the game became too much and it bowed out of the home computer market – perhaps less than gracefully – last month.

UK companies felt the chill too. Last month saw Sinclair spin-off Jupiter fold in Cambridge, while earlier in the year Grundy switched off its NewBrain, and Dragon had to call on a £4½ million rescue package to stay in the game.

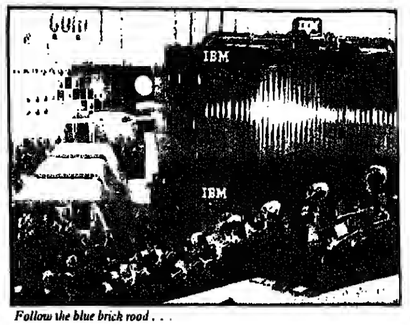
These price wars and their attendant effects on manufacturing companies were not new to the consumer market. But this year things moved up a gear – and moved up range. Business micro manufacturers began to feel the pinch, and stock market favourites fell from grace as profits dropped and delivery schedules slipped.

The predicted shakeout, from hundreds of micro companies to just tens, had begun. IBM had

Companies that slithered into troubled waters try again

made it a game for grown-ups, and there would be room for only a few players.

Some falls were more spectacular than others. Pundit and self-professed figurehead Adam Osborne was shuffled sideways out of direct control of the company he founded. Osborne Computer sales halted, as promised new models with "IBM compatibility" were delayed, and the company was forced into seeking protection from bankruptcy from the US courts.



Follow the blue brick road . . .

Chuck Peddle, designer of the Commodore Pet all those years ago and the original force behind the Victor (née Sirius) micro company, stepped aside too. Victor's backer, the Kidde Corporation, stumped up cash to keep the company going, but the workforce is getting smaller and losses increase. To many Victor looks shaky, propped up by Kidde, because Kidde has too much in Victor to lose.

One-time darling of the money men Fortune Systems, the micro company claiming the biggest venture capital backing when it was set up, turned in losses nudging $10 million.

Founder Gary Friedman – no stranger to computer company reverses after his time with hardware leasing company Itel, which went bankrupt three years ago – resigned, followed by Fortune's finance director. And this was all because of software delivery problems for this up-market, multi-user Unix machine, aiming for a market niche not threatened by IBM. Yet.

At other companies there have been less drastic results from declining popularity. Share prices have tumbled in a wave of Wall Street pessimism at computer company prospects, numbers of employees have been cut back, prices of machines have been trimmed – or more has been offered for the same money.

Gnome followed IBM's announcements of PC-to-mainframes links through the 3270 PC and the desk-top power of its multi-window XT/370 – announced on the same day that Digital Equipment's share price fell $21 on its personal computer losses, "Black Tuesday", October 18. But despite that gloom, it is still a game that people want to play.

Personal computing is still a market companies feel a need to move into. Only last week Sperry leapt in with its IBM-PC-like micro, its first personal computer product. The move leaves only CDC of the established mainstream computer majors without a product in this area.

Companies that went for a splash in the micro market but rather slithered into the trouble waters try again. ITT is after a comeback with new IBM-PC compatibility, despite lacklustre sales of its 3030 micro. Olympia has put the sad sales performances of its Boss micro behind it and is looking again to break out of traditional office equipment into the automated office micro.

In most of these moves – both first and second attempts – the IBM presence is clear. The blue hand print of PC compatibility (for protection against the evil eye?) is displayed proudly. Sperry has just done it. ITT has just done it. Data General did it on its Desktop Generation, DEC did it with a vengeance.

But the best example of the born again micro maker must be Hewlett-Packard. It stopped and took stock for six months, then changed course radically. Its history had been one of high quality expensive micros for niche markets – mainly the scientific and engineering circles, which bought HP because it was HP. Now it is going hard for the micro mass market, general purpose business machines, with the HP 150, the Touchscreen PC.

"We made the decision about a year ago," says Alan Furniss, HP's new UK general manager of the personal computer group, a reorganisation of previously separate business centres within HP. "It was before the glamour went out, before all the troubles, but the mainstream microcomputer marketplace is huge – and growing.

Lately DEC's plans look to be going awry – so why will some succeed where others with equally grandiose plans may fail?

"You need to get the product right to start with," says Furniss, "and with personal computers that means the software. We recognised MS-DOS as the right operating system, with a whole heap of software from industry standard names, plus plenty of local popular packages for each market."

Or to paraphrase, everybody else has followed IBM, so to succeed you need to follow the blue brick road. There will be variations, in HP's case the touch-sensitive-screen, for TI the speech board extra, that mark out some from the mass "me-too" products, but IBM has set the winning style.

Promising the right product is not enough. Companies have to produce machines that live up to customers' expectations at a price that is right for the real world.

There is another departure here for HP, says Furniss. The 150 will be the first HP product to sell at a price set by the market, rather than one based on cost plus a margin, and that price will drop if the market cheapens.

Gaps between promised performance and capability that can be delivered have plagued some of the trouble-struck micro companies. With others the troubles have been in delivering machines that measure up at a price customers will pay and the makers can afford.

With others, the problem can just lie in being able to churn out

Customers play safe and go for the stability epitomised by IBM

ing the market with the PC, hard disc XT, mainframe terminal replacement 3270 PC, high power XT/370, plus rumoured 68000-based supermicros. Texas Instruments is heading that way, with a portable machine just launched to back up the Professional Computer desktop IBM clone, and the promise of more to come.

Hewlett-Packard is starting that route, with compatible products for its 150 Touchscreen family promised every three months – plus all the others it already produces up to the 32-bit desk-top mainframe. Apple is going that way, with Macintosh imminent to plug the gap between the ageing Apple II, disappointing Apple III and upmarket Lisa. Commodore will be moving that way when its Zilog link turns up Z800-based 16-bitters.

There is still room for a comfortable living from small companies filling niche markets, from companies fulfilling market demands for home-built machines; from companies like Convergent Technologies and Scotland's Future Technology Systems, selling OEM to other, bigger try; and from companies that follow the leaders, but do it more cheaply.

These will come and go, though – maybe being swallowed up by bigger computer makers to fill out company expertise.

Image counts. The winners will be those companies with the marketing strength to be seen as survivors. Doubts about viability – will the company be around in six months time to maintain and extend large micro installations? – dent sales. This in turn raises doubts about company viability.

Customers coming along to buy thousands of machines to install in large companies play safe and go for the stability epitomised by IBM.

"The companies to survive will be the big ones that want to stay in this market," says HP's Furniss. "You need financial muscle for short notice R&D to keep up. You need to be able to spend millions at the drop of a hat.

"The ones that are just playing at it are never really going to be successful."

And then there are always the Japanese . . .

PEDDLE and OSBORNE . . . No longer in the limelight.

CAMBRIDGE LONDON OXFORD DURHAM BRISTOL BELFAST WALES EDINBURGH EXETER

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PERSONAL COMPUTERS

Micro sales double to 1 million units

John Aczel combs through the latest surveys on a rapidly-growing market

WHILE it is a cliche now to say that the microcomputer market is growing rapidly, there is little doubt that the increase in demand for micros has been much sharper than originally anticipated. The use of micros is now widespread and growing rapidly in industry, in educational establishments, in laboratories, as well as among the *home hobbyists*.

In this article, the statistical background to the size of the market for microcomputers will be examined in some detail. Many figures are flying about (some of them ill-informed) which show the tremendous growth of the market for this equipment. It is hoped that a more realistic approach to the trend in micro sales will emerge from this investigation, even though a fair amount of crystal ball gazing is involved in any exercise of this kind.

Some computer manufacturers have been putting out wild forecasts about the growth in demand for micros, and some of their predictions have been very misleading. Naturally, with an industry which is so new and fast-changing, it is not always possible to make accurate assessments about the underlying trends.

Nevertheless, this sector is growing up and, though it has not yet reached maturity some of the latest developments can now be examined with some degree of confidence.

There is considerable confusion about the definition of the micro sector. In its broadest sense, a microcomputer is any system which is based on a microprocessor and which can be used for manipulating figures and words.

Thus, it includes a wide spectrum of products ranging from hobby computers to business and professional machines of various kinds. Normally, these micros are single-user systems, though some of them are being upgraded to multi-user purposes but, in this analysis, the main emphasis will be on single-user equipment.

On the whole, a useful distinction is now emerging between the business machines and those used for hobby purposes. The hobby computers normally sell at around £200 or less and include such machines as the Sinclair Spectrum, the Commodore Vic and the Dragon.

Moreover, there is considerable overlap in these two segments, particularly with regard to some of the machines sold by Apple and Tandy, as they can often be found among hobbyists as well as among business organisations. Nevertheless, business computer machines usually have a higher price range, ranging from £2,500 upwards.

Evidently, any such division of the market is an arbitrary one, but it is important to make the split because the trends in the two segments tend to be quite different. Thus, in terms of units, hobby micros represent the bulk of the market but, by value, it appears that business computers are much more significant. It is believed that business machines accounted for over 75% of total sales by value in 1982-83, whereas, by volume, they represented only 15% of the total.

Various surveys have been carried out to assess the size of the market for micros, and some of them have been of fairly poor quality. Some of the definitions used in the surveys have not been precise and have led to considerable confusion. Recently, however, Keynote Publications, a market research company, has carried out its own survey regarding the overall micro market, and some of its conclusions are worth summarising.

According to this investigation, the total number of micros sold in 1982 reached around 500,000 units, and this figure doubled in 1983 to around one million units. Sinclair computers accounted for over 50% of sales during the past two years. Keynote has summarised its own estimates of the installed base for all types of computers, although it should be emphasised that some of these figures may be subject to revision in view of the introduction of new models in recent months.

The market for micros in terms of value was also assessed by Keynote and the total value was assessed at around £375 million in 1982, excluding the education sector. The home hobby market was estimated at around £90 million, while business computer sector was worth £285 million. Moreover, the education market, which was now growing fast, was considered to be worth an additional £15 million per annum.

A fair amount of crystal ball gazing is involved

The figures given by Keynote are of considerable interest, although, unfortunately, they do not break down the market sectors to any significant degree. For instance, some of the Apples and Taodys mentioned in the survey can be used for business purposes as well as for hobbyists, but it is believed that the bulk of the figures represent the home market.

One can presume that, under the heading of "others", some of the leading business computers have been included, such as the IBM-PC and other business computers.

There is little doubt that the hobby market will continue to expand, especially if prices in this sector continue to fall at their present rate. The biggest growth, at least in terms of value, however, will occur in the business sector, where the introduction of micros is becoming of crucial importance. Evidently, from the point of view of manufacturers of hardware equipment, the business side is the one to concentrate on, as the rewards are likely to be tremendous.

Statistical information can be derived from an excellent survey which has been carried out by IDC Europa, a market research organisation which has published a report entitled *Personal Computers Market Reference Book, Western Europe*. Full deatils can be obtained from IDC Europa, 2 Bath Road, London W4.

The IDC survey contains a mine of information not only about current trends, but also on future prospects. It is based on an extensive investigation, and has been backed up by a comprehensive postal questionnaire and by interviews.

Most of the leading Western European countries have been included in this investigation, but from the point of view of this article, special emphasis will be given to the results obtained for the UK.

IDC Europa adopts some precise definitions in its analysis, and divides the market into two sectors: the business and professional segment; and the scientific and technical side. The business and professional sector uses micros for accounting functions as well as for analytical and managerial purposes. The scientific market includes micros used by scientists, technicians and engineers, particularly for R & D departments, as well as for instrument and laboratory analysis.

At present, the UK is way ahead of its European neighbours in terms of shipments for business and professional computers. British sales in 1982 were estimated at nearly 65,000 units, and the growth in this market was averaging 37% between 1982 and 1985. This rate of increase is likely to slow down, but the total market could reach over 316,000 units by 1988, according to IDC Europa.

For scientific and technical computers, the UK is also ahead of other countries, although West Germany is catching up rapidly. Shipments in this sector amounted to nearly 16,000 units in 1982 and a growth rate of about 25% is estimated between that year and 1985. By 1988, shipments should reach

■ Continued on page 26

Table 1 – Number of installed microcomputers

	1981 (000s)	1982 (000s)	1983 (000s)
Commodore	50	160	320
Apple	30	55	100
Tandy	27	45	90
Sinclair	185	460	950
Acorn	35	85	170
Others	80	160	320

Source: Keynote Publications

Table 2 – Forecast of shipments in the UK for personal computers (by volume)

	Business/professional computers	Scientific and technical computers
1982	64,700	15,900
1983	96,900	20,400
1984	130,700	25,500
1985	167,600	31,000
1986	209,200	37,400
1987	259,400	44,500
1988	316,400	51,600

Source: IDC Europa

Table 3 – Forecast of shipments in the UK for personal computers (by value)

	Business/professional computers ($millions)	Scientific and technical computers ($millions)
1982	201	64
1983	294	86
1984	389	111
1985	482	143
1986	584	181
1987	692	224
1988	804	266

Source: IDC Europa

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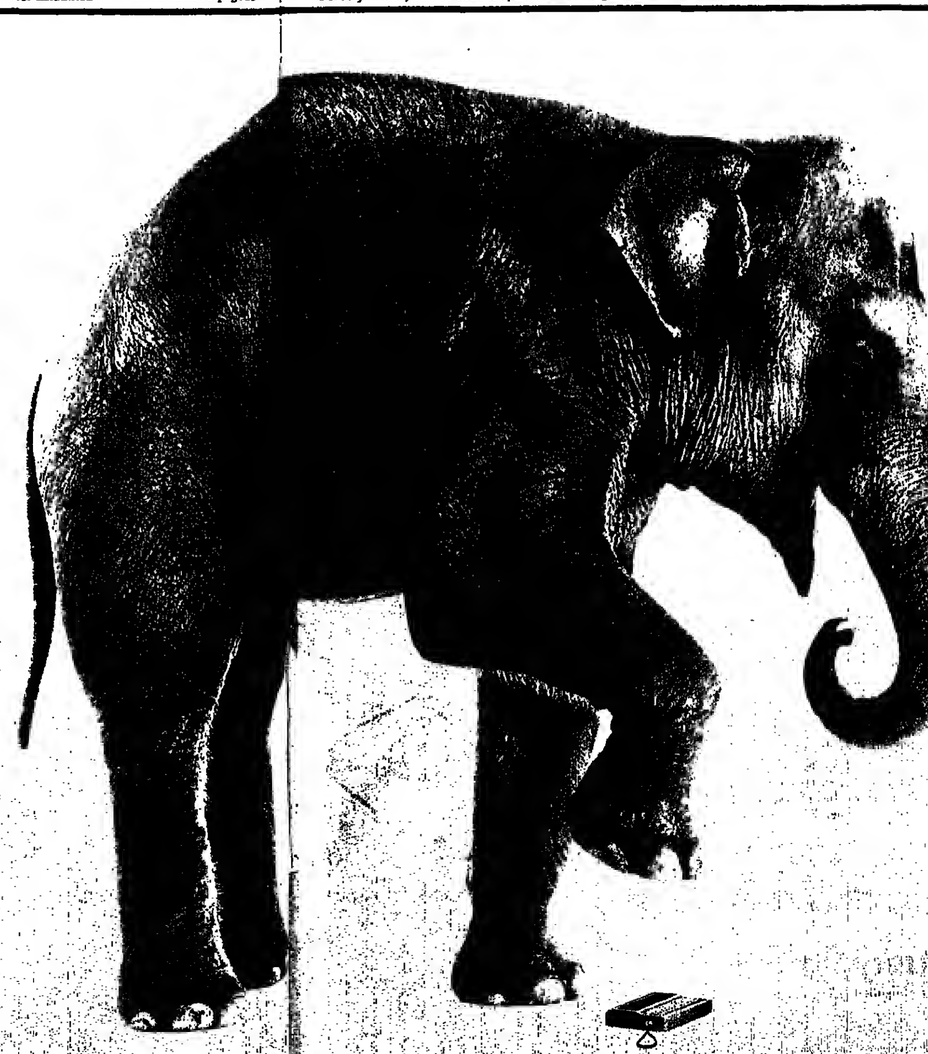

PERSONAL COMPUTERS

For the first time, there's a home computer that can bring the computer room into the living room.

IBM's new baby, the PC Junior, is at last with us. Roger Green analyses the most affordable IBM machine yet

Welcome, baby Junior

THREE major product announcements this winter have turned IBM's Personal Computer range into a compatible and formidable family of microcomputers. The family starts at a $700 home computer (the PC Junior) and goes all the way up to a mainframe-on-a-desk at 15 times the price – (the XT/370) and a seven-tasks-at-once mixture of computer terminal and personal computer – (the 327it-PC).

Most attention has been attracted by the appearance on November 1 of the Junior. At the time of writing, this had only been announced for sale in the US, but it could appear in Britain in time for Christmas next year.

The other two variants of the Personal Computer unveiled in October are likely to have a big impact on the corporate microcomputing scene.

In particular, the new IBM products will squeeze not only those suppliers which are active in the home computer business, but also those microcomputer, minicomputer, and computer terminal companies which hope to do well out of surrounding IBM mainframes with their own, alternative workstations.

The Junior should be considered either as a powerful but pricey home computer or as a low-cost but rather limited personal computer compatible machine. It is suitable – at a pinch – as a professional's low-cost alternative to a full personal computer, or as a portable or home-based machine for users of the full-sized PC.

In the US, the Junior is seen very much as a rival to the Apple II as a home computer. That's a comparison that's not really valid in Britain, where disposable incomes are lower, and the Apple has had more of an impact as a business and professional personal computer. This is a role to which the Junior will be ill-suited: there's only one disc drive officially available and the keyboard is not really suited to anything but fairly casual use.

The Junior should be considered either as a powerful but pricy home computer or as a low-cost but limited machine compatible with personal computers

The Junior's lack of ability to display high-quality monochrome text – a major feature of the ordinary personal computers – also limits its appeal to the serious microcomputer user.

If the Junior is carefully-priced, when (and if) launched in Europe, its cost could compare favourably with the more expensive home machines – notably the BBC microcomputer. It would be particularly suitable for business people who think they should use microcomputers in their businesses but would like to try one out at home first.

Although the IBM Junior almost certainly would cost more than its rivals, it has two big advantages over other home computers: it uses a 16-bit processor chip which delivers more processing power than the eight-bit chips used in other domestic machines and, more importantly, offers users far bigger memories to run programs.

Secondly, the Junior is positioned at the start of an unrivalled, compatible growth in single-user personal computing. The machine uses the same operating system and a good proportion of the same applications programs as all the other models of the Personal Computer.

With the IBM Junior, a user could start off with a $700-odd (£460) no-disc-drives model; grow smoothly to a $1,300 (£870) single disc drive machine; then graduate to a full-blown IBM Personal Computer with proper keyboard, high-quality monochrome text display, two disc drives and printer (£3,500).

After that, there are the high-capacity, 10-Mbyte PCs. The growth goes all the way up to the £8,228 IBM PC XT/370 mainframe-on-a-desk. This has 64 Kbytes of main memory, and two 10-Mbyte disc drives. It can run programs written for IBM mainframe computers, as well as those produced for the PC.

For the first time, there's a home computer that potentially brings the computer room into the living room. In practice, few buyers are likely to start with a diskless Junior with programs stored on audio cassettes, and then move on to an XT/370. But there's lots of useful scope in between.

PC Junior is a compact, desk-top microcomputer that's to be sold in two parts: a "system" unit, and a 62-key keyboard. A visual display unit – either a US NTSC broadcast standard television set, or one of two standard types of monitor – costs extra. The battery-powered keyboard can be used without a cable by communicating with the system unit by pulses of infra-red light, in the same way as some makes of remote control television set.

The invisible link is claimed to work at distances of up to 20 feet, as long as keyboard and display are in line-of-sight of each other.

There are two models of Junior: both based on the same system unit. The $669 Entry Model features 64 Kbytes of main memory and two slots to accommodate read-only memory cartridge-based programs. Storage for data is provided through a built-in audio cassette recorder interface.

The $1,269 Expanded Model is just the cheaper Entry Model with the addition of a 64 Kbyte memory expansion module, and a PC-compatible 5¼ inch, 360 Kbyte floppy disc drive.

The Junior, is limited – probably intentionally – in the quality of text it can display on-screen. Although it's as good as any other home computer, it's not in the same league as the text displays produced by the PC and other, modern professional's personal computers.

For serious users, the Junior's weakest point is its keyboard. What it does have going for it is the technical gimmickry of the infra-red link. In practice, though, this is not a particularly vital or even especially useful feature.

For skilled users, the Junior's keyboard is tougher than touch typing. The more typical hunt-and-peck keyboarder will find the Junior frustrating too. The keys are poorly labelled and it's difficult to see which is which.

There appear to be no immediate plans at IBM to bring the Junior to Europe: in most countries, the company is still trying to settle down to the novelty of selling through computer shops, without becoming immersed in the consumer thrust of what is at one level, almost the toy business.

A likely time for the Junior to be launched in Britain is before the Christmas 1984 buying period.

IBM will have to do some hard thinking about its price, though. Disposable incomes in Europe tend to be lower than those in the United States, yet IBM tends to price its personal computer products higher in the UK than it does in its home market.

Roger Green is editor of PC User.

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7 and 8 February 1984

Conference Programme

7 February 1984

Day 1 Morning

Chairman's introduction
David Fairbairn, Director, NCC

Most significant trends
Mike Reidy, Senior Consultant, IDC Europa

IDC Europa, the international market research company, and Computer Weekly are combining on regular surveys of the UK data processing industry. Mike Reidy will draw on data from those surveys, as well as IDC's other market research efforts, to map the current and future course of information systems.

Systems Architecture – the options
Will Zachmann, Vice President, Corporate Research, IDC

Emerging as a key issue in systems aquisition is the processor or processors. With options available for single, tandem or multiple processors, what are the selection criteria? Allied to this are the capabilities of the operation systems for multiple processors and the separation of data handling procedures (database, dataflow, file servers).

Afternoon

Chairman's introduction
David Craver, Editor, Computer Weekly

User software – the options
Reg Boot, Group Director, Training and Software, NCC, Fons Kuijpers, Consultant, IDC

While the decision between package or custom software remains, there are new factors which will influence this. There is a choice of software development tools available with program generators and new design methodologies. What impact if any, will expert systems have in the area?

Human Interface – the options
David Hebditch, Consultant

User friendliness can mean many things, from simplicity of system usage to the ergonomic effectiveness of the equipment. What effect will multi-function work stations and graphics capabilities have on human interface? Will voice input begin to replace the keyboard?

8 February 1984

Day 2 Morning

Chairman's introduction
Peter Rowell, President, IDC

Human resource – the facts
Dr John A.G. Thomas, Publishing Director, Computer Weekly, Deputy Managing Director, Electrical-Electronic Press.
John Griffith, Group Director, NCC

The most important resource. What are the facts about salaries and current trends? What are average staff turnover levels? How do you find, train and then keep your good staff? This session will also cover the role of the IT supremo and the concept of the information centre.

Communications – the options – 1
Martin Healey, Professor of Microprocessor Engineering, University College, Cardiff

This session will consider the options available for users of local area networks (LAN) giving emphasis to the topologies (Star, Ring, Ethernet) and their application.

Afternoon

Chairman's introduction
David Fairbairn, Director, NCC

Communications – the options – 2
Professor Martin Healey, Dr. Peter Scott, Manager Communications Division, NCC

When the network involves remote sites with long distance telephone lines interconnecting them, this is a wide area network (WAN) this session examines the factors influencing WAN systems, the manufactures, the location of people, the modern PABX, teletex and viewdata.

Communications – the standards issue
Keith Bartlett, DOTI

International standardisation organisations are making real progress towards supplier-independent standards which are of benefit to users. For IT communications the most important of these standards are for open systems interconnection (OSI) the Dept. of Trade and Industry is supporting the development and introduction of these standards through IT's 'intercept' programme.

Panel Discussion

Application of AI – the options
Brian Oakley, Director, Alvey Programme

Artificial Intelligence and expert systems are now all the rage. There are, however, very few working systems, and many question whether they have a useful application in the commercial data processing environment. Brian Oakley, who is leading the UK's research and exploitation of the next generation of computer systems, describes what is available and what is promised.

Chairman's Summary

Full conference details will be sent to all delegates upon registration, complete with accommodation and travel arrangements. The conference fee of £365 + £54.75 VAT includes morning coffee, full lunch and afternoon tea on both days, as well as documentation.

The Information Technology Planning Conference 1984 – PLAN IT84 – is backed by and utilises the resources of Computer Weekly, the National Computing Centre and IDC Europa.

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CW12

CWEE 2

PERSONAL COMPUTERS

Micro meets mainframe

Martin Banks looks at the growth of computer interfaces

ONCE upon a time there was the intelligent terminal, a device without which no self-respecting DP manager or owner of a time-sharing network could possibly be seen. Then one day, along came the personal computer.

For many years, the two have looked entirely different animals. The personal computer, with its history steeped in the world of the soldering iron-wielding, techno-freak hobbyist, was just a little far removed from the environment of the intelligent terminal – serious, business-like, protective and efficient.

The personal computer, however, has grown. Some of the companies that started making hobbyist kits are now important, multinational corporations. Other companies, steeped in the history of the serious use of computers, have realised the potential of the personal computer and what it can add to the existing facilities available to users through their mainframe and minicomputers.

That realisation has subsequently prompted them to enter the market of personal computers themselves – occasionally with notable success.

Early shots at providing a comprehensive tool have come from Peachtree

It was only a matter of time, therefore, before the flexibility and performance capabilities of the personal computer came to be attractive to those in the market for intelligent terminals. All that has been needed is the means by which an effective interface and usable between the personal computer and a larger host machine could be made.

To be fair, interfaces of one sort or another have been available for some time. But it is only now that communications packages offering a full and comprehensive capability to the end-user have started to appear. These offer the end-user the type of facilities and capabilities found in systems utilising dedicated intelligent terminals – devices that are specifically configurated to operate over one communications medium with one specific type of host computer.

The first sign of his happening came some years ago, following the general acceptance of CP/M as the de facto standard operating system for microcomputers. Byrom Software developed a package called BSTAM and for the first time there was a generally available package that allowed communications across different computer systems. The only shared feature required was that they ran the same operating system, CP/M.

Personal computers have left the realm of the hobbyist.

This proved a real boon to users, who found they could communicate programs and data to a machine next door, or half way round the world, with ease. True, the machines were all CP/M-running micros and it would have been nice if one of the machines could be a mainframe so that the micro could act as a front-end machine – previously called an intelligent terminal.

Byrom came up with a solution here, called BSTMS, a fairly generalised package intended to allow either Ascii or binary files to be transmitted between the micro and the mainframe, and vice versa. It has been followed by several packages from a number of software houses, each intended to provide a specific type of link between mainframe/mini and a micro.

Term-II for example, makes a CP/M machine look like a dumb terminal on time-sharing systems using either Ascii or EBCDIC protocols, while Bisync 80 provides emulation facilities for IBM terminals on CP/M machines.

The majority of these packages have only scratched the surface of what is actually required of a comprehensive mainframe/microcomputer interface system. Their main task has been to provide an alternative hardware solution to the use of a dedicated intelligent terminal. This in itself is entirely honourable, for many of the intelligent terminals supplied as official hardware by the mainframe companies are anything but cheap.

Well engineered and fully featured, yes. Cheap, no.

Many users have seen the sense of utilising a cheap micro with the right software as an intelligent terminal, for not only have they often been less expensive, but when not in use as a terminal they have been available for use as general purpose microcomputer systems.

This has been entirely satisfactory to those users able to exploit the technology and its techniques. But there is a vast army of potential users who do not have such expertise, yet still they have a requirement for linking to mainframe computers with their own micro.

This is especially so in many large corporations where the decision-making process is distributed across a large number of individuals. All may be experts in their own fields, but are not so in computing. They need comprehensive mainframe/micro communications tools, but lack the expertise to engineer or configure them from available individual products.

Needless to say, such tools are now becoming available.

The early shots at providing a comprehensive tool have come from Peachtree, which has combined the basic requirement for communication with a set of application tools aimed at meeting the general processing needs of the average business executive.

Despite the fact that the system, known as Executive Peachpak, carries with it the obvious drawback of being compatible only with IBM mainframe systems which run software from Peachtree's parent company, MSA, it does serve to show the trend in mainframe/micro communications systems.

Its main advantage over the straightforward communications link is that a complete environment for the executive is created. Designed primarily for linking IBM Personal Computers to IBM mainframes, it incorporates a range of generally applicable products both from Peachtree's own resources and from the product rosters of several other major software suppliers. In each case, the idea has been to provide the user with the typical tools of the business executive.

A significant element of the Executive Peachpak system is the rather grandly titled Universal Interface. This is a software link built into the package which has the task of interfacing the Peachpak communications system directly with a range of software applications packages.

These include the full range of business applications software from Peachtree itself, plus the famous VisiCalc spreadsheet, and the recently introduced Lotus 1-2-3 management information system.

The ability to communicate around the world does not in practice pre-suppose one's ability to say anything

There is also a range of tools for such business applications as graphics, data management, and management reporting tasks, with word processing and a colour graphics module.

As it is designed for the IBM-PC and PC XT, it is most easily integrated into that machine, coming as it does as a plug-in expander board to provide the physical link. Other computer systems can be accommodated, however, by means of a separate protocol converter box.

In either situation, the package sets out to provide the user with the facilities needed to conduct business as an executive. There is nothing particularly novel about this, for there is ample software available to provide all the aspects provided in the Peachpak.

Only time will tell whether Peachpak as a product eventually succeeds in the market place. It seems fair to speculate, however, that a product of this type (or several different ones of this basic configuration) will be what the users come to expect. It may seem trite to point out that the ability to communicate around the world does not in practice pre-suppose one's ability to actually say anything.

Apply this notion to the business world however and it gains a different relevance, for, though business people have a desperate need to communicate with each other both rapidly and efficiently – and with information technology equipment such facilities are now readily available – they still need to be able to speak to each other in comprehensible terms.

That means, in practice, being able to swap programs and data files and diagrams, preferably without having to worry too much about how it all works. The early samples of such facilities are now with us.

Delving into sales predictions

■ From page 22

over 51,000 units, if current trends are maintained.

IDC discusses the main factors which are likely to influence shipments for microcomputers. In particular, it emphasises the difference between demand by the small business and that by large organisations. The biggest growth potential is likely to be for small firms, though this market continues to be very fragmented and competition is fierce.

According to IDC, "the majority of potential users have little or no knowledge of microcomputers as yet, although this is fast changing". The salesmen of microcomputers in this field play a major part and act as consultants and, though some selling organisations have a poor reputation, this situation will change as salesmen become more professional in their approach.

Moreover, competition will weed out the less efficient computer organisations as users become more aware of their requirements.

Among larger users, the major suppliers of micros have been showing increasing interest recently. In particular, IBM has established a strong niche in this field and it is likely that its dominance will increase. For large organisations already possessing IBM equipment, it is natural for them to purchase the IBM-PC which can be linked up and act as a terminal for management purposes. In addition, IBM machines are being used on a standalone basis, to provide computer power for managers without the need to refer to the DP departments.

Apparently, the penetration of personal computers in large firms is still quite small and the potential here is tremendous, although it is likely that only the well-known computer firms will be able to compete effectively in this field.

The characteristics of the scientific and technical market are different from those for the business sector. Users in this market are more sophisticated and knowledgeable than their counterparts in business and they tend to use micros as specific tools, normally to carry out complicated and elaborate calculations for research and development purposes.

Usually, scientists also require special interface facilities for their peripherals, as they like their computers to be linked with the instruments used in their laboratories. Evidently, the peripheral connections are of great importance, especially when used in a laboratory environment.

Many scientists and technical people use specialist systems for scientific applications such as those produced by Hewlett-Packard. They tend to be fairly expensive, but IDC also found that general purpose microcomputers, like those produced by Commodore and Apple, have been utilised in the scientific sector. These micros tend to be cheaper and have to be adapted to the special needs of the scientist or the technician.

Evidently, the market for scientific and technical computers is smaller than for the professional sector, but there are rich pickings to be had for manufacturers who supply the special needs of this sector.

The prices of some micros will fall quite sharply

There is little doubt that scientists will require high performance equipment and, in some cases, will be willing to pay a high price if their special requirements are being catered for in terms of computer capability.

IDC provides detailed forecasts for shipments as well as for installations up to 1988 and the business and professional market may increase fivefold in that period. The increase in value, however, will be slightly less, growing by a factor of four, due to falling prices.

For the scientific and technical side, the total volume will grow by a factor of three, though by value the increase will be even more. IDC has assumed that the price of scientific micros will go up in view of the need for specialist equipment, though it is possible that with mounting competition, any price rises for scientific micros will be limited.

There is little doubt, however, that the total market for business and scientific computers will be enormous and could reach over $1,000 million by 1988, representing nearly 370,000 units.

The report also gives some idea of the market share held by the major manufacturers of micros and, for the professional side, Commodore, Apple and Tandy have been holding the leading positions in 1982. Sirius and Osborne were also important suppliers during that year.

From these figures, it is quite clear that the personal computer market is set for a major surge in volume. A growth of between 35 and 40% per annum is likely to take place over the next few years, though competition is likely to be stepped up even further.

The prices of some micros will fall quite sharply, but the rewards are likely to be enormous for those manufacturers which can supply high performance equipment at a reasonable price.

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PERSONAL COMPUTERS

Users: you're entitled to help

Dick Moore says it's the supplier's job to back up small businesses

ALL the adverts make it sound so simple – buy a micro and some software from your friendly local dealer, take it to the office, plug it in and there you are effortlessly running a more efficient business. How many users would instantly recognise their own experience from this scenario? Unfortunately, too few.

The fact is that if you are buying a spreadsheet package you can probably learn how to use it on your own, but if you are buying software for accounting, stock, recording, payroll and the like for your business, you will need help.

This is nothing new. Large companies installing mainframe accounting software still need the help of their suppliers despite having their own data processing department.

The micro world has been asking the end-user to install his other applications, equally vital to his business, without the luxury of in-house expertise or a high level of external support. It can be compared to asking the chief accountant of a large company to install his own accounts payable.

Large companies installing mainframe accounting software still need their suppliers' help

The point is that most mainframe software is sold at a cost of tens of thousands of pounds, so suppliers can afford to hold their client's hand through an installation.

The cost of a microcomputer package is in the hundreds, and the margins are not enough to enable suppliers to sell direct (other than by mail order), to install, or to maintain an installation.

Instead, most microcomputer hardware and software companies turn to their dealer network. It has been largely left to these dealers to support the end-user through installation and teething problems, which may arise with even the most efficient of accounting packages.

In the sphere of the business microcomputer, the professional dealer is therefore taking on an enormous responsibility. While rapidly improving, the lack of computer literacy in the majority of would-be first-time users puts a strain on the dealer. With the profit margins on sales equally low for the dealer, few have the resources to provide the complete hand-holding service so often required by the end-user.

To help both dealer and user, major software suppliers are now spending time and effort trying to improve the "self-installability" of the products themselves. At Peachtree, we are stressing the importance of our product management team which is made up of staff with an accountancy background which extends to our technical authors.

Each member of the team is expected, periodically, to participate in an installation to obtain actual experience of user requirements to complement their product knowledge. From their experience of the applications they are preparing workable examples, for the user, of how different aspects of the software are implemented. This is intended to give the user a clear idea of how to introduce our applications into his business. This approach will, we hope, aid self-installation.

Most suppliers are improving the user-friendliness of the product with improvements to the computerised demonstration product. Far more care is also being taken in design, preparation and maintenance of documentation.

Additionally, more importance is being placed on the training of the dealer network. Most suppliers now have courses which they encourage dealers to attend.

With this kind of background, the prospective buyer can be confident that he is buying from someone who understands the product and who will be able to advise him on the suitability of the product for his company's requirements.

While the majority of dealers do provide training, it is far easier for the supplier to take responsibility and provide end-user training facilities with courses specially designed for the non-technical person. In doing this, the supplier frees the dealer so that he or she can concentrate on those areas where more hand-holding is required.

User training courses, professionally developed and run, have an enormous impact on the speed of implementation of application software within the business environment. Not only should such courses help the user understand the way the computer approach fits business requirements and how to operate the software, but also the basics of the microcomputer.

The interest from the user in these specially designed courses is on the increase. At Peachtree, we have found a steadily increasing demand for our end-user courses and that we are being given the responsibility of training a group of staff from a single user company.

The whole industry needs more success stories: the media should be full of such items. The industry, unfortunately, is still geared to selling boxes and not business solutions. The users who actually care about the technical aspects of the boxes are few and far between – what they require is a tool which will help them run their business.

It is up to the industry to ensure that small businesses can computerise with minimum disruption and maximum support.

Dick Moore is UK general manager of Peachtree Software International.

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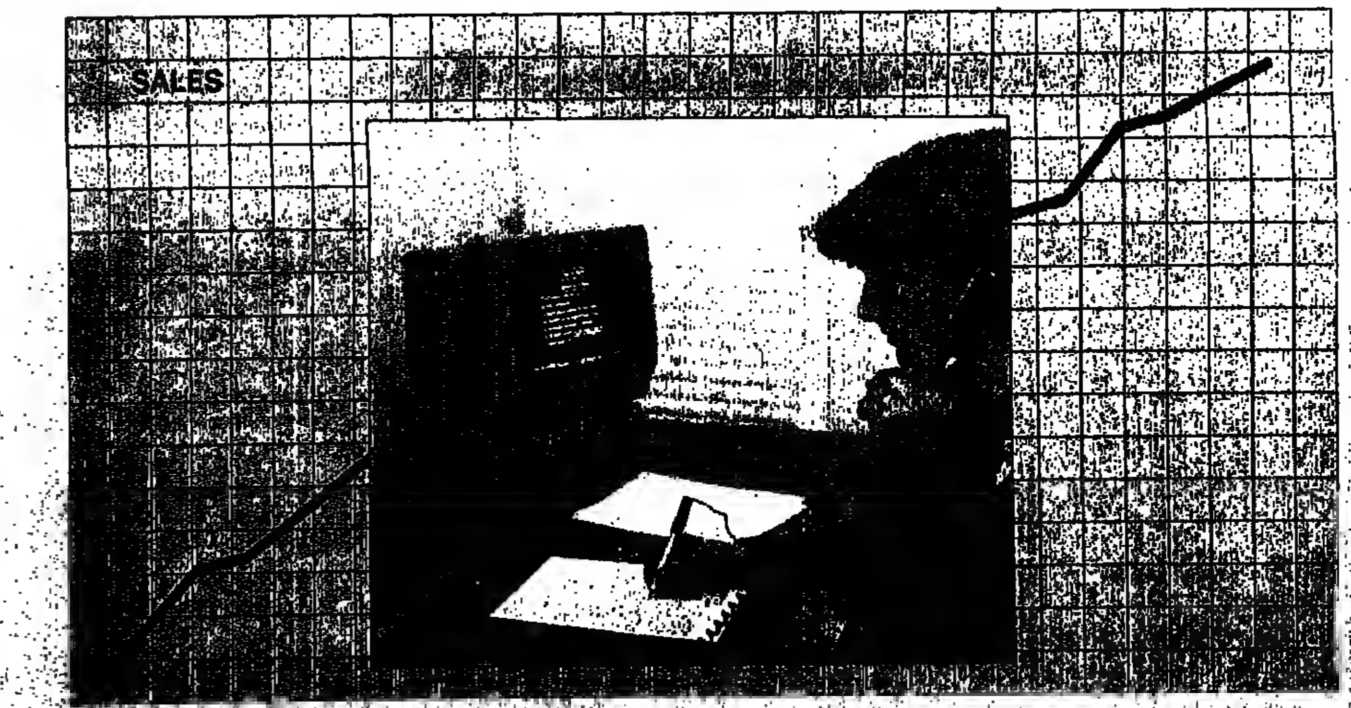

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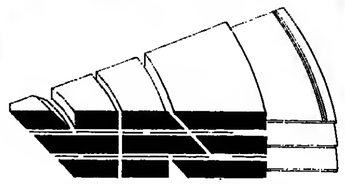

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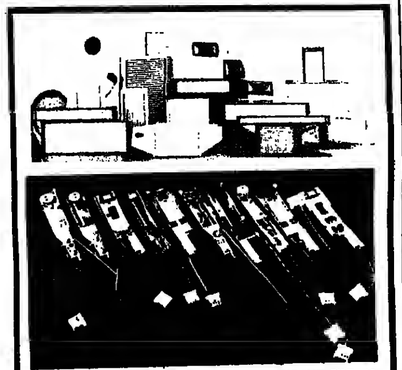

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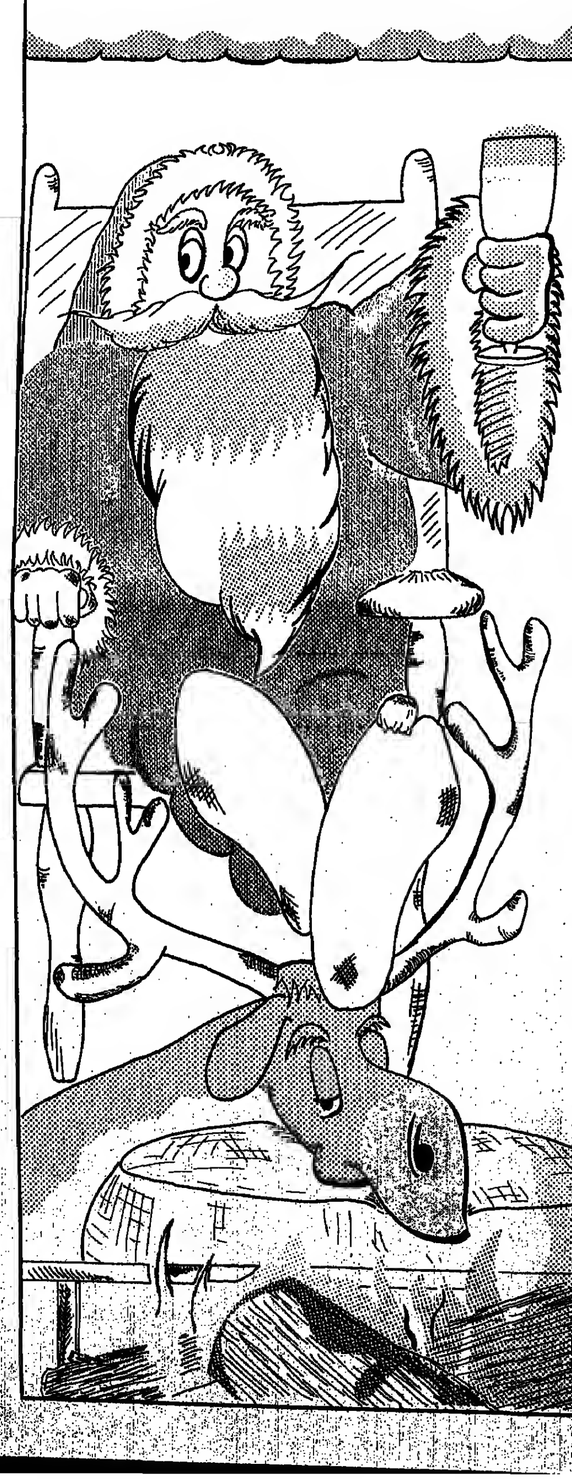

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(8701)

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(8859)

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(6801)

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3 **More Hardware Engineers** are required to help us expand the Merlin range. They will be involved in the development of hardware to interface to PABX's, computers, telex, Prestel and other services. They will also help to develop the next generation of OA equipment.
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Merlin
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General Manager

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For an application form please telephone or write to: Mr. R. W. Turner, Personnel Manager, Philips Research Laboratories, Cross Oak Lane, Redhill, Surrey. Telephone: Horley 5544.

PHILIPS Research Laboratories

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[6998]

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to £12,000

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[6988]

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[6998]

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QUALIFICATIONS AND EXPERIENCE: Education to the level of either GCE A level and six years' relavent experience or to the level of HNC with four years' relevent experience. Sound practical knowledge of FORTRAN and/or PASCAL and data-reduction techniques. Personal qualities should include aptitude for teamwork and ability to operate in an international environment.

Net annual salary is approximately DG40,000, plus additional allowances (depending on family status). An expatriation allowance may be payable.

Contracts will be offered for an initial one-year period with the possibility of renewal on an indefinite basis.

Candidates, who are nationals of one of the NATO countries, are invited to send full details of training, experience and personal data to the Personnel Officer, SHAPE Technical Centre, PO Box 174, 2501 CD The Hague, Netherlands, not later than December 30, 1983, quoting reference B5-OR-1/83. All applications should be in English.

[6994]

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Telephone 0494 449555

[6999]

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[6993]

It's almost 1984 which means new budgets and new opportunities for the New Year. It's now you should be taking stock of your position, your agency and your next contract. For those who are not aware of Computastaff as one of the largest and the most *successful* agencies or for those of you who may not have yet joined the world of contracting, it may help you to assess *us* and what we have to offer – now.

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Both posts will initially be based at Northampton but are expected to be moved to Corby during the course of 1984. We expect to negotiate a generous salary and profit-sharing package with the successful applicants.

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Tel. 01-387 0252.

(6946)

UNIVERSITY OF STRATHCLYDE

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PRINCIPAL COMPUTING OFFICER

Applications are invited from graduates for a post of Principal Computer Officer. Candidates for this senior post should have experience of several of the major activities of the Centre, viz maintenance and development of mainframe operating systems and software, the acquisition and use of applications programs, local and wide area communications, computer graphics, the use of microcomputers and microprocessors, and the provision of a range of user services including education and advisory/library services.

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(6818)

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(6970)

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UK CONTRACTS

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ADF PROGS.	SEVERAL	3+
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VM SYSTEMS PROGS	N. + W. LONDON	4-6
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SNR. PROG IMS DB/DC ADF	S. + C. LONDON	6+
U/V PROG DMS TIP	N. LONDON	3-6
MVS SYSTEMS PROG	N. E. LONDON	3
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PROGS DATAPOINT/DATABASE	W. MIDDX.	3-6
PROGS IBM ASSEMBLER/SHADOW	KENT	3-6
PROGS IBM MANTIS	KENT	3-6
PROGS HONEYWELL SCREENWRITE	VARIOUS	3-6
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(6964)

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P866

Business Analyst

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P867

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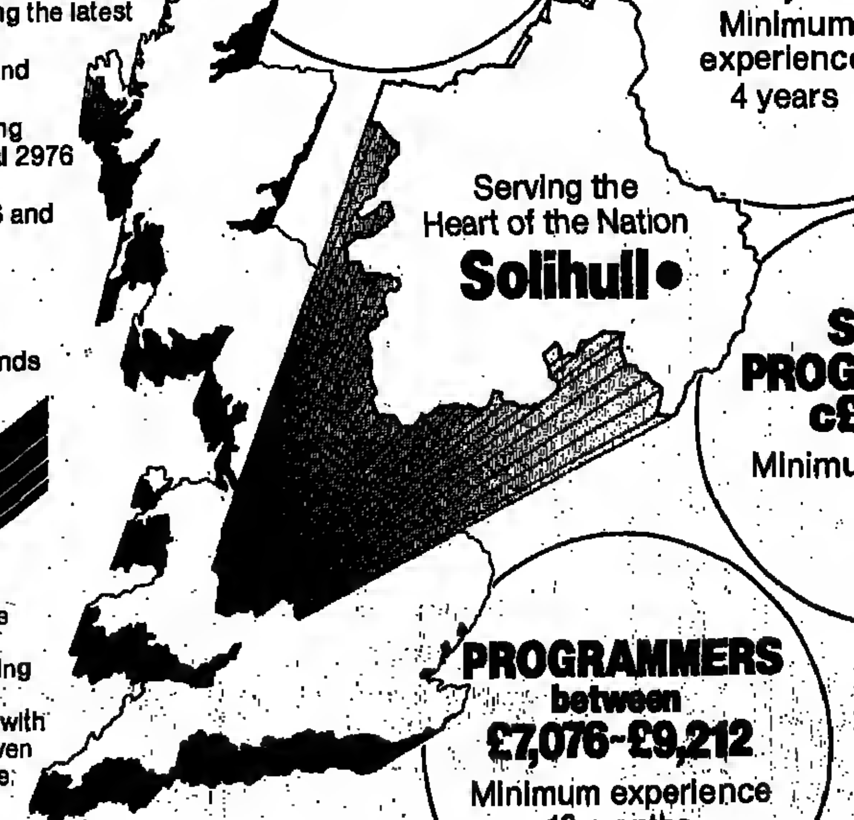

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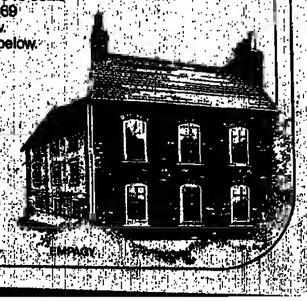

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A User Services Manager (Ref 2713) is required. The person appointed, who will preferably have proven experience in the technical and managerial roles of University Computing, will have responsibility for the User Interface and be involved in the planning and implementation of the facilities required to meet the communities computing needs.

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A Systems Programmer (Ref 2714) is also required to assist in the maintenance and development of the Multics system. Experience of PL/1 would be an advantage. The Salary will be on the PR Scale 1B (£6,310-£9,875) or 1A (£7,190-£11,615). Duties to commence as soon as possible.

Applications (2 copies) together with the names and addresses of two referees should be forwarded to the Vice Principal (administration) and Registrar, University College, P.O. Box 78, Cardiff CF1 1XL, from whom further particulars are available. (Please quote appropriate reference). Closing date 16th December 1983.

PERMANENT

PROGRAMMER/ANALYST — WEST END — to £15,000
With a System 38 due the MIS department of this U.S. corporation has a very full development program. To ensure that priority projects are completed on time they now need two experienced System 38 professionals. Ref. 8333/MJ

ANALYST/PROGRAMMER — MIDDLESEX — to £13,000
A major bureau operation supporting both IBM and DG hardware is currently looking for experienced A/Ps with DG BASIC under RDOS. Additional experience of PL/1 or COBOL is an advantage. Ref. 8332/MJ

ANALYST/PROGRAMMER — HERTS/ESSEX BORDER — to £11,000
A major subsidiary of a household name group is currently looking for an experienced analyst/programmer to work within a business systems environment. Experience of CICS, DL/1 in a DOS/VSE installation is essential. Ref. 8228/MJ

Contact DAVID at KPG or on 01-747 0969 (evenings and weekends).

ANALYST/PROGRAMMER — HANTS — £10,000+
Minimum two years' experience on IBM mainframes utilising DL/1, Mantis and COBOL together with a sound commercial awareness will qualify you to enter the interesting yet demanding world of this national retail company. Ref. 8295/HP

PROGRAMMER — ESSEX — £9,500+
Major electronics company seeks Honeywell level 66 programmer with experience of using COBOL, IDS, TDS. An inquisitive mind and management goals are the pre-requisites for this exciting position. Ref. 8334/HP

SENIOR ANALYST — AVON — £10,500 min.
If you have a broadbased background in computing, enjoy the intellectual challenge of analysis and thrive in a user support environment this is the position for you. Minimum requirements are a sound fluency in FORTRAN, COBOL and BASIC. Generous relocation package available. Ref. 8313/HP

ANALYST/PROGRAMMER — NORTH LONDON — £10,000
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Contact HAYDN PARRY at KPG.

RPG II PROGRAMMERS — CITY — to £11K neg
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2. Senior programmer with two-three years' RPG II preferably on the UNIVAC System 80.

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TECHNICAL SUPPORT — S.W. LONDON — to £11.5K
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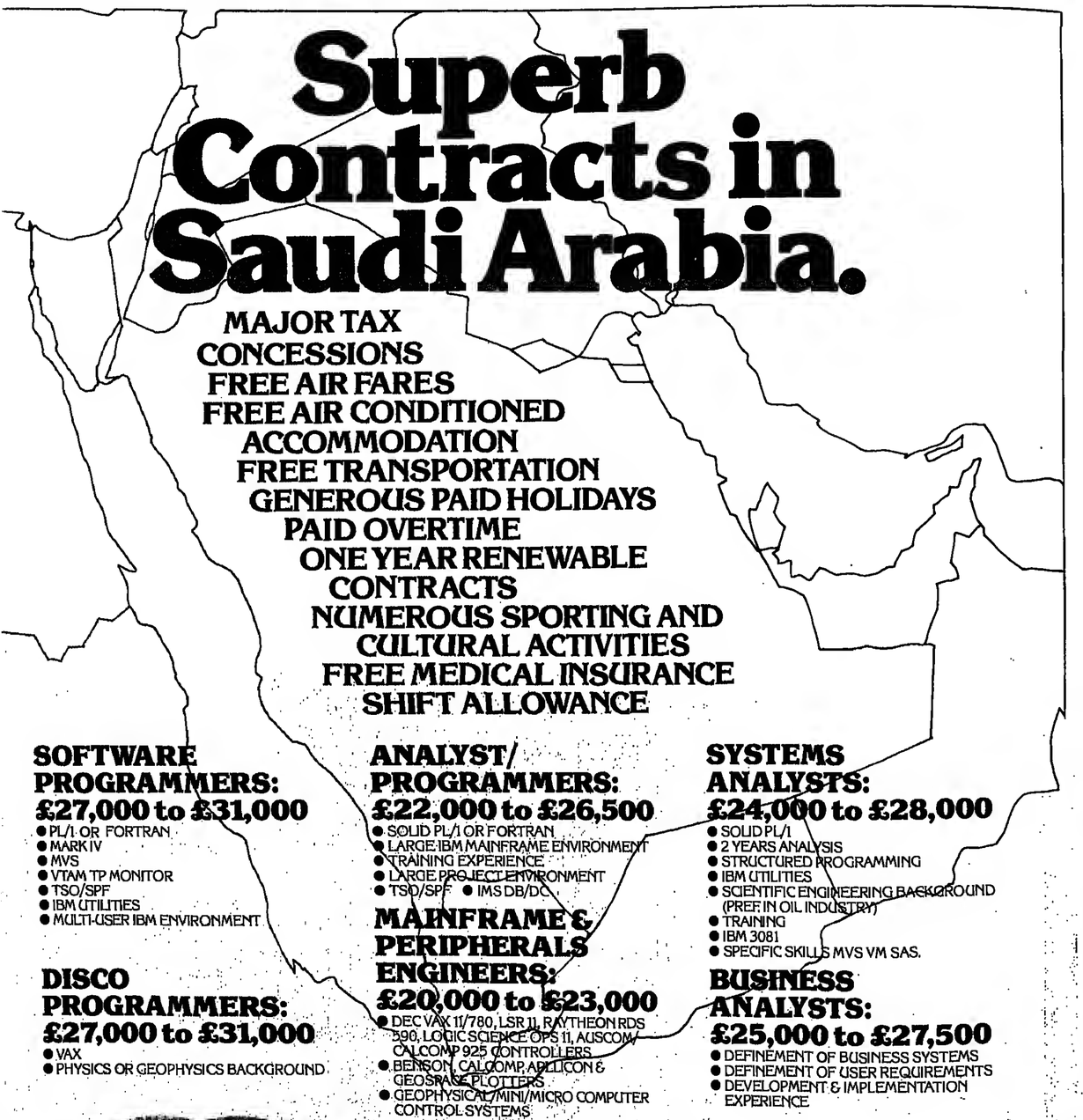

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The successful applicant will be responsible to the Telecommunications Supervisor for the efficient day to day running of the network which consists of data, telex, facsimile and voice equipment. As a Telecommunications Analyst, you will be required to provide technical support to the users and to produce clear concise progress reports on system development and maintenance. There will be some opportunities to be involved in the specification of various communications systems.

We are looking for someone qualified to HNC level with at least three years experience of speech systems, data lines and international circuits. Candidates must also have relevant practical experience and be able, where required, to maintain the system. The position could involve some time offshore and it would therefore be advantageous if applicants had offshore communication experience.

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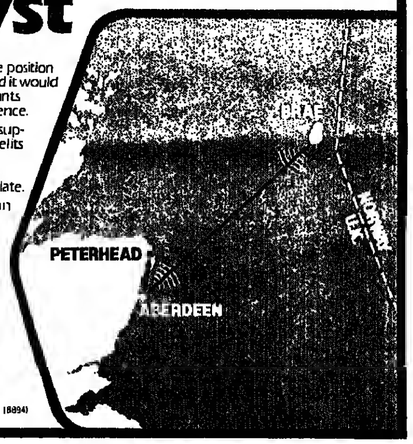

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To lead a team of programmer/analysts in the design and production of software for the Administrative work of the Polytechnic. This software is being written using a powerful and sophisticated management information system on a Prime 750 computer.

The post offers an ideal opportunity for a systems analyst or experienced programmer to further their career by moving into a management position in one of the leading Computer Centres in the educational field.

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Closing date for applications: 8th December 1983

(6884)

Computing & Electronics
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To work in a small team developing on- and off-line diagnostics packages for C³I systems. You should have mini-computer ASSEMBLER programming experience and some digital hardware knowledge. Three or more years experience will be necessary.

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Salaries will depend on seniority and length of experience, but will be up to $50,000 (Exchange Rate is $1.50 = £1), plus a highly comprehensive benefits package which includes profit-sharing, overtime payments, complete insurance coverage, generous expenses and car allowance on assignment

Interested applicants should telephone G. Rowlands on 01-631 4411, or write to Moxon Dolphin & Kerby Ltd., 178-202 Great Portland Street, London W1N 5TB, quoting ref. no: 3112.

Interviews will be held locally

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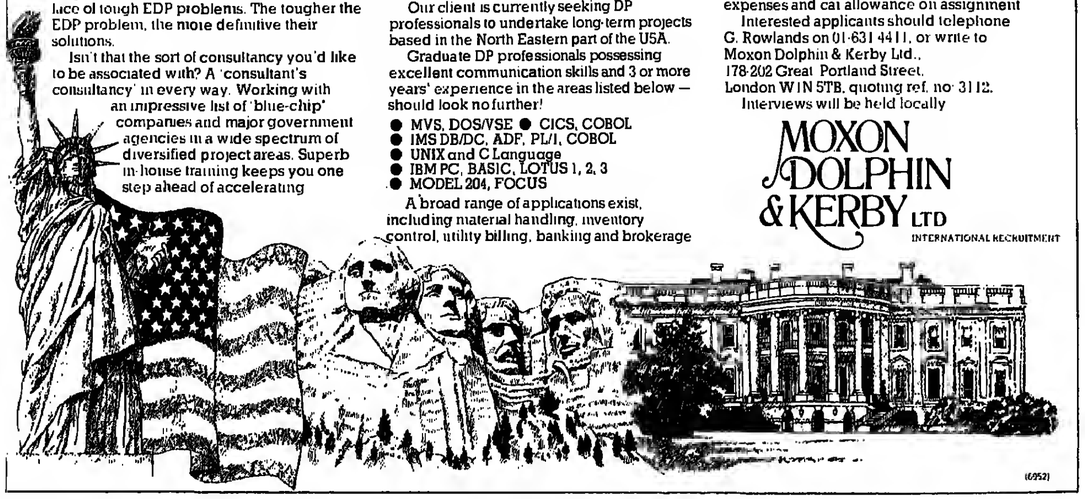

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Please write with full details, listing separately any companies to whom your application should not be forwarded. All applications will be treated in confidence.

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Or if you want to know more about us please phone 0329-285 424 and speak to Clive Crossley.

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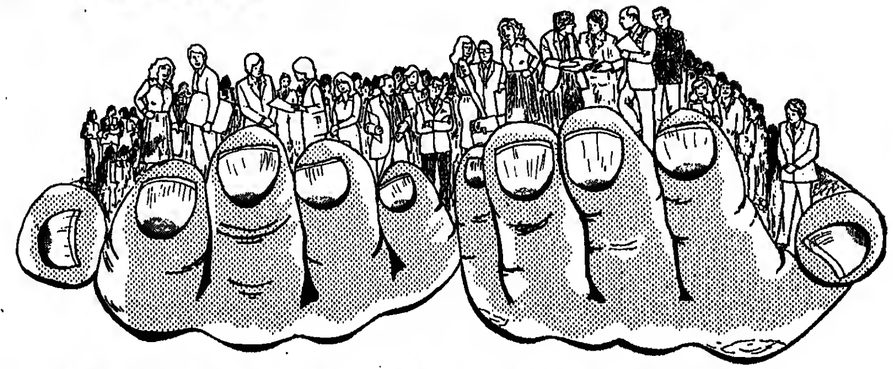

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Interviews will take place before Christmas, client interviews in early January.

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A SPAN GROUP COMPANY

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For further information and immediate local interview contact Tony Parker [illegible] in confidence to:

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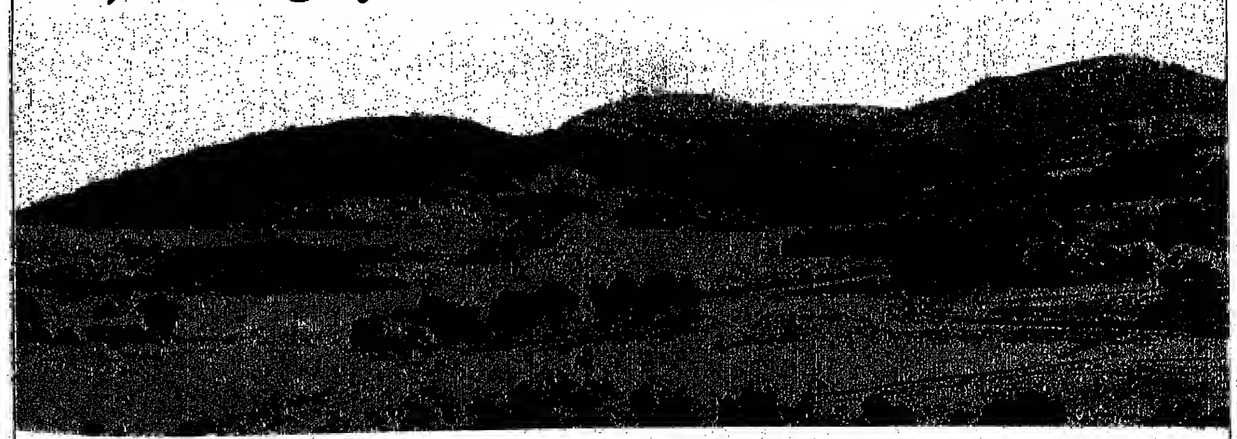

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NWS

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Computer People North

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ACT are now firmly established as the UK's most successful Computer Company.

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Senior Software Engineer -Operating Systems...

to £12,000

This position requires a candidate, preferably qualified to Degree standard, with 2/3 years experience of operating systems, gained within a mini or micro environment. Ideally, experience of any of the following — MS-DOS, CPM/86, C or PASCAL — is sought, although overall ability is of prime importance.

Software Engineer- Applications...

to £11,000

Qualified to Degree standard, you will have around 2 years' experience within a mini or micro workstation environment, in any of the following areas:

integrated communications applications; user interface; database.

Again, whilst by no means essential, experience of any of the following — MS-DOS, CPM/86 or C — would be most welcome.

Design and Development Engineers

to £11,500

Candidates, qualified to Degree standard or equivalent, should have at least two year's experience of modern microprocessor based technology, and have a good knowledge of LS1 and TTL. Although a dominant hardware background is required, any experience of software, particularly ASSEMBLER or PASCAL, would be most welcome.

All these positions are integral to the Research & Development Group and offer unique opportunities to young, ambitious individuals, who wish to develop their careers within a stimulating and challenging environment, where ability is recognised and rewarded.

An attractive commencing salary will be paid, and other benefits include full relocation expenses, if required, to an area of the country where a wide choice of reasonably priced accommodation is available, and where excellent communication links and public transport facilities, make a variety of living styles possible.

For further information regarding these positions, and to arrange an initial interview, please contact **PETER LEES** on **061 833 0427** (24 Hour Answering Service) or 061 439 9595 (Evenings and Weekends before 9 p.m.)

Initial interviews will be held in your local SCR Regional Office.

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SOUTH James House, 46 James Street, London W1M 5HS 01-935 0871/486 0481

MIDLANDS & INTERNATIONAL 35/37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 8761

NORTH International House, 84 Deansgate, Manchester M3 3ER 061-833 0427

BELGIUM Avenue Louise 327 Boite 4, 1050 Bruxelles 010 322-640 715/71

HOLLAND Willemsparkweg 82, 1071 H.M. Amsterdam 010 5120-7800-47

NEW ZEALAND

SYSTEMS ANALYSTS OR SENIOR SYSTEMS ANALYSTS

DEVELOPMENT METHODOLOGIES DATABANK – A WORLD LEADER

Databank Systems Ltd., is unique in its central role of handling the EDP needs of all the New Zealand trading banks as well as operating a substantial commercial bureau operation.

We have developed and operate a nationwide distributed network which links 17 computer centres and hundreds of bank branches. The hardware includes 20 mainframes (ranging from IBM 3083's to IBM 4331 (Group 2) machines) together with numerous mini computers and micro processors. Development activities are concentrated in our head office in Wellington (New Zealand's capital city). Current major developments include the re-development of the basic banking system using the information engineering methodology.

The department for which we are recruiting has the important role of supporting the use of information engineering by the applications development teams. This support is provided through the provision of internal consultants as well as evaluating current practices, tools and aids, and introducing improvements.

Our vacancies will interest those who are already senior systems analysts or equivalents, and who have a good knowledge of information engineering, data analysis or a related structured analysis technique. They will be able to demonstrate a professional approach to technical problems and human relations as well as an ability to think logically and to communicate well.

If you are definitely interested in a career with one of the world's leaders in EDP please air mail a resume to:

Manager
Staff Services
Databank Systems Limited
PO Box 3647
Wellington
NEW ZEALAND

Two of our senior managers will be in the UK early 1984 to personally discuss what Databank and New Zealand can offer.

166399

GROUP DATA PROCESSING MANAGER

£15,000+CAR

FERGUSON PRINTING & PACKAGING LTD is the divisional holding company of a successful and expanding international public industrial holding company.

The Division currently operates three IBM System 34 computers and is planning to install hardware in all its 13 companies, and to develop both its commercial and production software.

This is a new position and it is envisaged that the successful applicant must be a complete professional, able to provide advice and guidance to company executives on D.P. matters, an in-depth knowledge of IBM 34 and MAPICS, willing to install new releases of S/34 and S/38 software and program in RPG II.

He/she, whilst based in London, must be prepared to travel frequently within the UK and overseas for short periods to install and maintain new installations and provide operator training with hardware and software evaluation.

Application in writing only, giving career and experience details to:

G. H. Solly
Company Secretary
34 Old Queen Street
Westminster, London SW1H 9HP
Ferguson Printing and Packaging Limited

166341

The Moving Picture Company

Computer Animation Programmer

The Moving Picture Company is situated in the heart of London and is the best equipped video facility in Europe.

We require a person to develop and operate our 3D imaging systems. Programming would at first be mainly in BASIC and later PASCAL using several Hewlett Packard computers.

You should have practical skills in 3D graphics and the ability to work efficiently under pressure. Experience in working with film and video would be a great advantage.

Applications in writing only with details of relevant experience to Maggi Allison, The Moving Picture Company, 28 Noel Street, London W1.

167591

CONTRACTS

IBM

MVS SYSTEMS PROGRAMMER	SURREY
OS/VS1 SYSTEMS PROGRAMMER WITH CICS, ROSCOE	HERTS
IDMS (ADS ON-LINE PREFERRED) COBOL ANALYST/PROGRAMMER	LONDON
3083 SAS (PL/1 PREFERRED) ANALYST/PROGRAMMER	MIDDLESEX
DOS/VSE CICS, DL/1 COBOL ANALYST/PROGRAMMER	MIDDLESEX
4341 COBOL PROGRAMMER WITH INQUIRE	SOUTH COAST
DOS/VSE SYSTEMS PROGRAMMER	SURREY
SYSTEM 34 RPG II PROGRAMMER	LONDON
SYSTEM 38 RPG III ANALYST/PROGRAMMER	LONDON
SYSTEM 38 RPG III PROGRAMMER (INSURANCE)	KENT

ICL

VME 2900 TOTAL, SCL, TPS PROGRAMMER	SURREY
VME 2900 TECHNICAL SUPPORT	SOUTH LONDON
2904/ME29 MTS, COBOL PROGRAMMER	DEVON
VME 2900 ANALYST/PROGRAMMER	TYNESIDE
VME 2900 IDMS, TPMS, COBOL PROGRAMMERS	BIRMINGHAM
VME 2900 IDMS, COBOL PROGRAMMERS	SOUTH COAST

OTHERS

UNIVAC 1100 COBOL PROGRAMMER	ESSEX
PRIME, PICK PROGRAMMER	SURREY
INTEL MOS, ASSEMBLER PROGRAMMER	WEST SUSSEX
HP 3000 COBOL PROGRAMMER	BERKS & MIDDLESEX
TANDEM COBOL PROGRAMMER	LONDON
TANDEM ANALYST (BANKING)	LONDON
VAX, VMS, PASCAL & C SOFTWARE PROGRAMMERS	BERKS
SIRUS 1, D/B II PROGRAMMER (FINANCIAL MODELLING)	LONDON
HP 3000 RAPIO PROGRAMMER	LONDON
PDP RMS, RTL2 (MACRO II PREFERRED)	OXFORD
DG BUSINESS BASIC PROGRAMMERS	WEST LONDON
PROGRAMMERS FOR IBM 4341/WANG CONVERSION	KENT
PROGRAMMER FOR ICL GII/HP CONVERSION	KENT

For details of these and other on-going requirements please contact Lorraine, Lynne, Wendy or Tony at KPG, or alternatively contact Lorraine on Welton-on-Thames 245552 (evenings and weekends).

ENGINEERING

RF DESIGN ENGINEER	SUSSEX
DIGITAL DESIGN ENGINEER	SUSSEX/SURREY
ELECTRONIC COMMS ENGINEER	SUSSEX
ANALOGUE ENGINEER	SUSSEX/SURREY
TEST EQUIPMENT ENGINEER	SURREY
PROCESS CONTROL ENGINEER	SURREY
SOFTWARE ENGINEER	SUSSEX/SURREY
COMMISSIONING ANALOGUE ENGINEER	SURREY

Contact Lynne at KPG or on 01-543 4140 (evenings and weekends).

166851

KPG
01-948 5922
KPG Computer Support Services Limited
Cobden House, Park Lane, Richmond, Surrey, TW9 2RA

Merchant Banking

City of London

Our client has twin UNIVAC 1100/60's servicing a network which is currently being expanded to support over 100 micro-computer based terminals. If you join this well-established DP department you will be producing systems for one of the City's leading Merchant Banks and will, therefore, be gaining the following valuable benefits in addition to the salaries quoted.

- Mortgage Subsidy
- Non-contributory Pension
- Profit Sharing
- Free Life Assurance
- BUPA
- Interest-free Season Ticket Loan

Please contact Joan Ainsworth on 01-681 8311 or write to her at C.S.S., 6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey, CR0 9XF.

Analyst/Programmers

£9,000 to £15,000 plus benefits

Our client is working on a wide variety of financial systems and, in addition to a sound background in COBOL programming, is looking for experience of some of the following:

- Investment systems including Portfolio Management and Valuations
- Dealing Room Systems
- Foreign Exchange Systems

Previous design and implementation experience is called for, together with the ability to liaise with users at many levels.

Computer Search & Selection (Southern) Ltd

COBOL in Surrey

DEC PDP-11's and VAX

Our client is a computer services company within a well known group, which is currently expanding to take on more development work. Group benefits include a good pension scheme and profit-sharing/productivity bonus. They have a variety of hardware, which includes DEC (PDP–11 and VAX) and micro computers.

Experience gained in a commercial environment (accounting, payroll, personnel records) or manufacturing/production control, would be of particular interest. The systems to be developed will be both on-line and batch. In addition, you will be given the opportunity to broaden your experience by implementing micro-based packages.

For these and other positions please contact Joan Ainsworth on 01-681 8311 or write to her at Computer Search and Selection, 6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey, CR0 9XF.

Senior Programmers

to £13,000

You will already have had at least 3 years' programming experience including, ideally, some supervisory experience, as you will be responsible for the technical supervision of programmers. Additional requirements will be the ability to communicate with non-technical users and to produce program specifications.

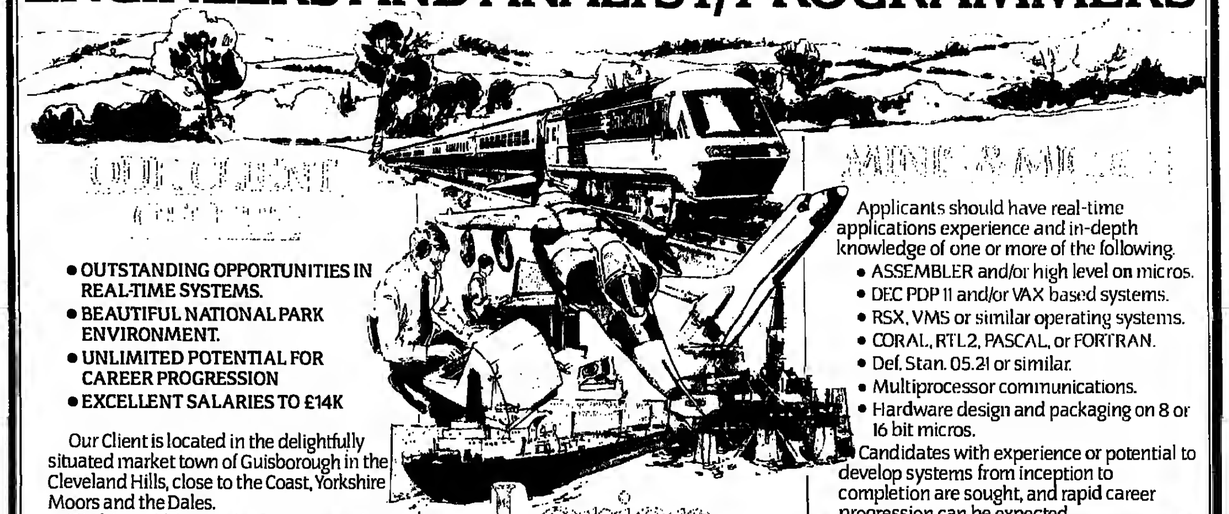
Programmers

to £11,000

If you have been programming in a relevant COBOL, for at least one year, and would like to join an enthusiastic team, where your skills will be recognised and you will be given the opportunity to develop these, we should like to hear from you.

Computer Search & Selection

SYSTEMS AND SOFTWARE ENGINEERS AND ANALYST/PROGRAMMERS



- OUTSTANDING OPPORTUNITIES IN REAL-TIME SYSTEMS.
- BEAUTIFUL NATIONAL PARK ENVIRONMENT.
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- EXCELLENT SALARIES TO £14K

Our Client is located in the delightfully situated market town of Guisborough in the Cleveland Hills, close to the Coast, Yorkshire Moors and the Dales.

Working within a major Systems Services Group, vacancies range from Programmers to Project Leaders. Opportunities for project experience on a wide variety of applications exist in all cases.

Applicants should have real-time applications experience and in-depth knowledge of one or more of the following.

- ASSEMBLER and/or high level on micros.
- DEC PDP 11 and/or VAX based systems.
- RSX, VMS or similar operating systems.
- CORAL, RTL2, PASCAL, or FORTRAN.
- Def. Stan. 05.21 or similar.
- Multiprocessor communications.
- Hardware design and packaging on 8 or 16 bit micros.

Candidates with experience or potential to develop systems from inception to completion are sought, and rapid career progression can be expected.

Contact Steve Sykes or John Mason on Leeds (0532) 455911 during office hours, or Steve Sykes on (0904 84) 350 evenings and weekends, or write to this address quoting REFERENCE CW/601

Lorien COMPUTER SERVICES LTD. We've got it!

O.C.S. HOUSE · SERVIA ROAD LEEDS LS7 1NJ

NEED ORWELL BE RIGHT?

No–there are always limitless opportunities for forward looking people, especially in the field of computers. Our client, situated in the Eastern Province of Saudi Arabia, has made massive continuous investment in the field of computers. Currently the State-of-the-Art computer systems include the IBM series 3033 and 4081 and a wide range of mini and micro computers (including IBM, DEC/VAX, DATAPOINT and APPLE). Major medical and small [illegible] are currently being developed and more are planned. To ensure the continued success of this long-term commitment, recruitment of capable professionals with developing skills is essential.

- **Systems Analysts/Programmers** with a minimum of 1 year PL/1, OS JCL and TSO; a knowledge of IMS would be an advantage.
- **Business Systems Planners** with broad DP background and an understanding of strategic applications planning; mini/micro experience would be an advantage.
- **Systems Analysts/Programmers** for end user support, especially with DEC/VAX or IBM PC experience. Opportunities exist in the WANG OIS/VS field.
- **Technical Planners** with a broad DP background, especially those with mini/micro experience.
- **Salaries up to £23,000.**

Candidates for these permanent positions should be educated to HNC/HND/degree level and will be rewarded with a complete remuneration package, subsidised accommodation and an extensive range of leisure facilities including squash, tennis, soccer, rugby, cinema and water sports are provided. The Company also operate its own libraries, TV and radio stations.

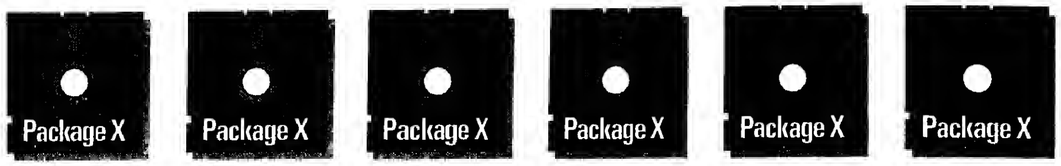
Interviews with a Company representative are scheduled for January 1984. You should telephone now for application details and further information. Contant Caroline Tee on: 01-723 4053 or write to: Comcap Resources Limited, 26 Chilworth Street, London W2 6DT.

COMCAP RECRUITMENT CONSULTANTS

10924

The need for computer personnel is on-going and if you are not available at present, register now for future opportunities.

Micro Software Package Evaluation



Spot the difference

Southern England

Up to £15,000

Everyone who has been involved in selecting micro software will recognise the problem: the variety and choice of products can initially be overwhelming.

Consider then the challenge facing the team of software professionals whose task will be to find and evaluate new micro software products for the UK's most comprehensive library of integrated micro software packages. This library will support a revolutionary new generation of versatile micro computers, destined to become a world-wide market standard.

We're talking about working for a leading manufacturer, in a role that will embrace not just in-depth technical assessment of the function and useability of a wide range of software products but also detailed investigation of the commercial viability of the packages in both vertical and horizontal markets.

To successfully meet this challenge and reap the substantial career benefits inherent in joining a young team at an early stage of its development, you'll be aged 23-30, of graduate status with a background that has embraced some 'hands-on' experience of applications programming for micro or mini systems. Beyond this basic requirement your background could reflect almost any sector of the industry – from working at a technical level within a sophisticated systems environment to providing a consultancy service as part of a systems house, manufacturer or dealer. It's even possible that you are currently developing the very packages my client requires.

Whichever applies, you'll be able to work on your own initiative, eager to learn and possess a level of potential that can be developed towards management.

To discuss these opportunities in greater detail, call **Hugo Fair** on **01-828 6846** or send brief career details to: **NSH Associates, 205 Victoria Street, London SW1E 5NE**

NSH

The substantial growth and continued investment by this Aerospace and Defence Systems Company in major research and development projects, has created the following vacancies at their research and product development centre in the West of England.

SENIOR SOFTWARE ENGINEER

To join a small team working on the development and integration of Ada based software tools and techniques.

The successful candidate must be innovative and have the ability to undertake feasibility studies, design, implementation and to liaise effectively with customers. He or she will have previous experience in at least some of the following:

- Translator Design
- Real-time software
- Distributed Processors
- Modern Programming Languages
- Formal software verification techniques
- Large scale software development
- Configuration management

IMAGE PROCESSING ENGINEER

To secure and develop the research group's image processing capability, working in a software systems team involved in state-of-the-art development at the forefront of technology. The work will involve feasibility studies, design, implementation and customer liaison.

Applicants will have familiarity with a range of image acquisition, characterisation, processing, analysis, interpretation and presentation techniques and technologies.

SENIOR CAD/CAE ENGINEERS

To be responsible for the creation, installation and development of integrated CAD systems, the objectives of which include the electrical performance and logical validation of digital designs implemented in V.L.S.I. full custom, part custom and off-the-shelf technologies.

Applicants will have relevant training/experience including electronic design and the software design of relevant CAD systems.

For all these positions, applicants should be graduate engineers with relevant experience.

For a confidential discussion concerning these opportunities, phone Marc Woolmer on 045-383-4877 or write to him with full career details at:

Marc Woolmer & Partners,
Suite S4S, Chancery House,
53/64 Chancery Lane, London WC2 1QU.

PERSONNEL & SELECTION CONSULTANTS

Marc Woolmer & Partners

BOX NUMBERS

Box number replies should be addressed to:

Box Number .....

c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS

TECHNICAL MARKETING SUPPORT WITH ACORN COMPUTERS

Cambridge c.£13,000 p.a.

Acorn Computers, leaders in the design and development of microcomputer technology, are seeking to strengthen their marketing team by the addition of two key personnel. Responsibilities will include identifying future markets, evaluating R&D projects, conducting full technical evaluations of competitive products, co-ordinating field trials, and briefing the sales force on new products.

MARKETING SUPPORT ANALYST HARDWARE

A sound knowledge of hardware engineering is required. This should cover processors and their supporting chips, the design features of peripherals including printers, monitors, keyboards and communications devices, and how they are combined to form micro-computer products.

MARKETING SUPPORT ANALYST SOFTWARE

A wide knowledge of applications software is required, including business/accounting packages, word processing, educational and entertainment software, languages and operating systems. The ability to make an analytical comparison of competitive products from the point of view of the user is essential.

The requirement is for graduates in a scientific or technical discipline with a minimum of five years' experience in the computer industry, and a good knowledge of micro-computer technology. Candidates will need to demonstrate strong analytical and communication skills, including the ability to write clear and concise reports. They will also require the inter-personal skills to liaise effectively with staff at all levels in other departments.

Write with full career details to David Batten, BSc (Eng.)
Clive Newton & Partners
Executive Recruitment Consultants
Business & Technology Centre
Bessemer Drive
Stevenage
Herts SG1 2DX

Quoting CN/110/CW who is advising on these appointments

ACORN COMPUTER

16936

Sales and Marketing

Guildford based

Realistic first year minimum

c.£20,000+car

Our client is part of a group which may fairly be described as a 'household name'. It is a new software house that the group has set up to specialise in specific vertical markets. These markets are Property Management, Commodity Broking and Export Shipping and, within them, the company will be providing a wide range of solutions to business problems, which may take the form of consultancy services, bespoke software, applications packages (including general accounting) and hardware. Hardware will cover the whole range of **DEC** equipment, together with the ACT **SIRIUS** and **APRICOT** micro-computers.

Remuneration will be guaranteed at £20,000 p.a. for the first 6 months and the success of the Company so far would indicate that £30,000 p.a. to £40,000 p.a. should be very achievable.

If you are already successfully selling, in areas that are relevant to our client's aims, and are capable of growing with the company, please contact Joan Ainsworth on 01-681 8311, Computer Search & Selection, 6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey CR0 6XF.

Computer Search & Selection

COMPUTER E-X-P-A-N-S-I-O-N

OPPORTUNITIES IN THE RETAIL INDUSTRY

Our client is a major multiple in the field of HiFi, TV, Video and Micro Computers. They are currently in the process of expanding their Sperry 90/30 systems and will be replacing them in March 1984 with two Sperry 80/8's to be followed later in the year by additional equipment. They are also introducing Mini systems and a major move will be in the installation of Electronic Point-of-Sale.

Due to this expansion Laskys are enlarging and re-organising their in-house DP operation and have immediate requirements for the following staff:

PROJECT MANAGER

For this position you will require extensive systems and management experience. You will take over full responsibility for the day-to-day management of all systems' development. In addition, you will be responsible for the definition of standards, project control, training and as part of the DP Management Team, the overall strategy of the department.

PROJECT LEADERS

You will be an ambitious Systems Analyst fully conversant with all its aspects who now wishes to enlarge on that base by taking responsibility for a multi-disciplined team of DP professionals. You will be in day-to-day contact with non DP staff and will be responsible for all aspects of the project from initial contact through to training and implementation.

SYSTEMS ANALYSTS & PROGRAMMERS

Several vacancies exist for both systems and programming staff to work in a Project Team environment. Ideally, you should have experience on Sperry equipment but for the right candidates we will give all the necessary training. You will have the opportunity of working on some of the most modern systems available as well as the chance to train in new methods and techniques for Mini and IBM systems.

As this is the first stage in a planned period of growth there will, from all the above positions, be opportunities over the next few years for advancement, training and additional responsibilities.

The Company offices are conveniently located in Hendon, NW9 and are close to both Main Line and Tube stations and have easy access to both the M1 and North Circular Road.

The positions attract excellent salaries, first class benefits and genuine career opportunities.

For any of the above positions please telephone George Shaw (01) 549 9236 (24 hour answering service).

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Dominic House, 171-177 London Road, Kingston-upon-Thames, Surrey KT2 6RA. Telephone 01-549 9236
Telex 915417 STARADG

Computer Operator

Solihull c.£7,000

3i is an independent private sector group concerned with the creative use of money in business.

We are looking for a Computer Operator to join our Group Accounts Unit based at Solihull.

Candidates should have a minimum of two years' experience of running on-line mini or mainframe computer installations, including remote equipment and telecommunications, on a day to day basis. They should be aware of security considerations and would be expected to control the use of the computer to provide optimum service to users.

Attractive financial sector benefits include concessionary mortgage facilities, free medical insurance, a non-contributory pension scheme and free lunches.

Interested? Please phone (reversing the charges) or write for an application form: Julie Graham, Investors in Industry plc, 91 Waterloo Road, London SE1 8XP. Tel: 01-928 7822.

3i Investors in Industry

Computing & Electronics myriad Recruitment Consultants

Could you be a Recruitment Consultant ?

Reading **£12,000 – £15,000 (1st Year)**

We wish to appoint additional consultants to our Reading Office. Experience in Computing and Electronics recruitment is not essential since we are able to offer a comprehensive training programme to people looking for an interesting career move.

As one of the largest consultancies specialising in Computing and Electronics recruitment, we have both the resources and expertise to enable you to develop the skills needed to succeed in this challenging and rewarding work you must have a background in the computer industry, such as software development, systems analysis or any sales oriented position. Without this essential grounding you could not be expected to give career advice to applicants or advise clients in major recruitment assignments. You must also possess the enthusiasm and self-motivation to succeed in competitive sales situations in which you will have the freedom to work very much on your own initiative.

If you do not have recruitment experience the wide range of activities encompassed by the work will surprise you. The first year's salary package is enhanced by excellent conditions of employment including a Company Car scheme.

To find out much more about the varied and interesting role as a Myriad Recruitment Consultant, contact us to arrange a discussion with one of our Directors, and we will tell you about the long term career opportunities available.

Please telephone our **Reading** Office quoting reference RW3/0812/CW/C.

Computing & Electronics myriad Recruitment Consultants

30 Fleet Street, London EC4Y 1AA
Telephone: 01-353 0981 24 hours
25 South Street, Reading, Berkshire RG1 4QU
Telephone: Reading (0734) 591 151 24 hours

(6983)

SYSTEMS PROGRAMMERS

LONDON AND HOME COUNTIES — £16,000 + 2-litre CAR

Leading independent support company seeks several Systems Programming professionals to service their rapidly expanding client base. Excellent rewards and career prospects. Candidates must have a minimum of two years' OS/MVS Systems Programming experience. Ref. T2055

SENIOR PROGRAMMERS

C. AND GREATER LONDON — to £12,000 + CAR

Several self-motivated professionals are required by this well-established software house to work on a variety of projects at their prestigious client sites. Applicants should have a minimum of two years' COBOL experience. Ref: T1984

IBM ANALYST/PROGRAMMERS

CITY — £11,000-£13,000

International insurance company embarking on major development projects requires two IBM COBOL Analyst/Programmers with two years' + experience using VM/CMS or CICS. Ideal opportunity to gain financial systems expertise in a purely development role. Ref: M2235

PL/1 PROGRAMMERS

CITY — £8,500-£11,000 + MORTGAGE

Financial organisation in the City seeks PL/1 Programmers for interesting and rewarding online development projects. *The company offers a defined career path and full range of benefits including* MORTGAGE subs, free SUPA and n/c pension. Ref: M2299

IBM COBOL PROGRAMMER

MIDDX. — c£11,000

Leisure services company retaining an IBM 4341 under DOS VSE with CICS and DL/1 wishes to recruit an enthusiastic and ambitious IBM COBOL Programmer. Full training in online programming skills and good career prospects are offered. The successful candidate will be involved in the development and support of the company systems. Ref:M2184

IBM COBOL ANALYST/PROGRAMMERS

ESSEX — £9,000-£11,000

Due to further computerisation of financial systems, this Essex-based manufacturing company has a requirement for IBM Analyst/Programmers. Applicants should possess 18 months+ COBOL expertise; training as required in CICS DL/1 and Analysis. Excellent career prospects and occasional overseas travel. Ref: M2100

COMPUTER TWO THOUSAND
D.P. Recruitment Consultants
217-218 TOTTENHAM COURT ROAD
LONDON W1P 9AF
(6852)
Tel: 01-636 7584 (24-hrs)

AID for RECRUITMENT

01-567 9184

AID EMPLOYMENT LTD
29/32 CENTRAL CHAMBERS
EALING BROADWAY
LONDON W5 2NR

DP MANAGER — CIRCA £15K + CAR
Good man-manager required to run Honeywell installation in Berkshire. Age 30-45.

IBM SYSTEMS PROGRAMMERS — to £17K + CAR
With Database knowledge.

SOFTWARE PRE-SALES SUPPORT — to £17K + CAR
VM MVS TP knowledge required. Based in S. East to support sales in UK and Europe.

ANALYST — EXCELLENT £ Neg.
Two years' IBM COBOL CICS TP experience required for bank in London. Usual banking benefits.

ANALYST/PROGRAMMER — £10-£12K
IBM ANAL/PROG with two to three years' experience required. Company will retrain in Micros and on-line environment. Based London.

RPG II/III PROGRAMMERS — Circa £10K
Far west London sites.

PROGRAMMER — £9.5-£10.5K
12-18 months IBM PL/1 IMS on-line experience. Degree education, based in London.

SYSTEMS ANALYST — £ Neg.
RPG III London usual banking benefits.

ICL PROGRAMMER — Circa £9K
COBOL, Berkshire.

CONTRACT
PERKIN ELMER reliance Fortran Programmer immediate start. WEST LONDON/MIDDX.

OPERATIONS

IBM VM DOS-VSE — Circa £9K
Three years experience

IBM DOS VSE OPERATORS — LONDON — Circa 6.5K
6-12 months' experience VM knowledge preferred

ICL ME29 — to £7.8K
Operators West London/Middx.

SHIFT MANAGER — WEST LONDON — to £12K
To "Man Manage" shift comprising, shift leader and three operators excellent package.

(6872)

RECRUITMENT CONSULTANCY

– A NEW CHALLENGE

LONDON W1 — £10-£15,000 PACKAGE

If you are CURRENTLY a Computer Recruitment Consultant or INTERESTED in training to become one, DP Selection Services can offer you that new challenge.

We are a division of the highly successful DP Support Services Group which recruits both permanent and contract staff for the UK Computer Industry and as a result of continued business expansion we are seeking to recruit staff for our Piccadilly W1 based offices.

If you can offer proven recruitment experience or two-three years' data processing experience coupled with a lively and tenacious attitude to succeed then telephone now to discuss your experience in confidence quoting reference WC081.

01-434 2042
dp SELECTION SERVICES
7 Swallow Street, London W1R 7HD

JOURNALIST

Middle East Computing

The Middle East is one of the world's fastest growing computer markets with the very latest computer technology being installed throughout the Arab oil states

Middle East Computing is the leading journal in this market and seeks a journalist to write about the exciting developments which are now taking place. Essential requirements: ability to write and express technical material in a clear and readable manner; a good grasp of computing technology. Knowledge of the Middle East market would be an advantage but is not essential; production skills would also be useful.

Based in Sutton, Surrey, the job offers considerable variety: news reporting, feature writing and journal production plus regular trips to the Middle East

Salary: £9,115 p.a.

Write or phone Sarah Hardcastle, Editor, Middle East Computing, Times House, Throwley Way, Sutton, Surrey. Tel: 01-661 8760

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IBM System 38 RPG III	SC 127
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HP 3000 Analysts with Manufacturing background	KC 181
IBM IDMS Consultant	CW 219
IBM RAMIS Progs	CW 220
IBM COBOL IMS with ADF	PH/DL 101
IBM DOS/VSE Systems Prog	DL 216
ICL TOTAL Analyst	DL 217
ICL VME8 Analyst	PH 218
ICL 2900 VME COBOL some with TPS	KC 214
UNIVAC System 80 RPG11/COBOL	DL 215
XEROX 820 Micro with Assembler & Telecoms	DB 221
ICL IDMS Database Analyst	CW 184
ICL Systems 25 Designer and Progs.	CW 133
ICL VME8 IDMS, COBOL, all levels some with TPMS	PH/CW 134
ICL VME8 COBOL with SCL	PH 136
INTEL 8086 PLM Progs.	DL 212
Technical Authors	SC 205
TANDEM Analyst/Progs.	PH 184
Analyst Prog. URGENT!	
UNIVAC 1100 COBOL	SC 154
VAX SYSTEL COBOL Prog.	DB 209
VAX VMS COBOL with DATATRIEVE	DB 202

Contact: STEVE CASEY, PETER HOLLIDAY
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OPERATIONS 0252 516141

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IBM OS MVS JES OPS.
IBM Sys 34/38 OPERATORS

IBM DOS VSE OPS. Pref. with VM
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PUBLIC SECTOR APPOINTMENTS

Suffolk County Council

Highways Department

The following staff are required as a result of the restructuring of the Technical Services Group to meet the demands of Direct Labour Organisation legislation, and to further the introduction of information technology systems.

For the Development Team:

SENIOR ANALYST/PROGRAMMER

Post H81

Grade SO2: £9,945-£10,539 p.a.

Applicants should preferably have a degree or equivalent qualification in Computer Studies or similar numerate discipline, be a member of a professional body, and have at least 4 years experience in programming and analysis in an engineering or scientific field.

ANALYST/PROGRAMMER

Post H79

Scale 6/SO1: £8,154-£9,660 p.a.

Applicants should preferably hold an HNC in Computer Studies or equivalent qualification in a numerate discipline and at least 2 years experience in programming and analysis in an engineering or scientific field.

For the Support Team:

TECHNICAL ASSISTANT

Post H63

Scale 4: £6,264-£7,005 p.a.

The post holder will initially be appointed on a two year temporary contract renewable subject to review. The appointed person will be responsible for providing support and monitoring the day-to-day use and operation of the Department's Computer resources both applications and systems, hardware and software, to meet the Department's data processing requirements, particularly those in remote Area offices. Applicants should preferably hold an HTC or equivalent qualification and have 3 years experience in Civil or Highway Engineering design or maintenance, and hold a current driving licence.

The County has a dual ICL 2972 mainframe computer serving an extensive terminal network. The Department additionally has a Prime mini-computer, several microcomputers, together with Tektronics and Benson equipment for graphics.

Generous relocation expenses payable in certain circumstances.

Further details and application forms obtainable from The County Surveyor, St Edmund House, Rope Walk, Ipswich IP4 1LZ, tel. Ipswich 55801, ext. 6309, returnable by 21st December 1983. (6927)

MUMPS PROGRAMMER

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Salary commensurate with experience. Accounting, medical application experience useful but not essential.

Contract 3-6 months initially.

Immediate start.

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Mr. Eduardo Ribeiro
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(6921)

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Our current resources include IBM 4341/2, IBM PC's, 5520 office system, local and remote terminals, VM/CMS, DOS/VSE, VSAM, CICS, UFO, & APL. You will be expected to have experience with some of these and will receive relevant training where necessary. You must be enthusiastic and willing to develop responsibility in a progressive environment.

Southampton is within easy reach of the New Forest, Hampshire beaches and countryside. An excellent relocation package is available.

Application forms are available from the Computer Services Manager, Southampton Civic Centre, Southampton.
Telephone: Southampton (0703) 832495

Closing date: 23rd December 1983.

Southampton City

SOUTHAMPTON

(6928)

UNIVERSITY COLLEGE CARDIFF

DATATYPE RESEARCH FELLOW

in

COMPUTING SCIENCE

at

The Department of Computing Mathematics and the Computing Centre

Applications are invited for this interesting fixed term (three year) Research Fellowship funded by Datatype Ltd.

Graphics Transfer Protocols and Graphics Editors will form the main area of research and the successful candidate will also be expected to contribute to the development of a specialist graphics workstation.

It is expected that the person appointed will have recently completed a doctorate and will be experienced in, and be able to demonstrate a knowledge of, computer graphics using mainframes and/or microcomputers.

Salary range: Research IB/IA £6,130-£11,815 per annum.

Duties to commence as soon as possible.

Applications (two copies), together with the names and addresses of two academic referees, should be forwarded to the Vice-Principal (Administration) and Registrar, University College, PO Box 78, Cardiff CF1 1XL from whom further particulars may be obtained.

Closing date: 30th December, 1983.

Ref: 2725. (6892)

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY

SYSTEMS ANALYST/PROGRAMMER

(Administrative Computing)

Systems analyst/programmer required to assist the Administrative Computing Development Officer in the design and development of selected parts of a fully integrated administrative computing system. The initial task will be to assist at the definition stage of a project on Registry computerisation followed by the design, program and test of portions of the system.

Proven success in the development of structured, fully documented software is necessary and experience in data base design and usage desirable. The ability to co-operate closely with Registry staff and to translate their operational requirements into user-friendly software is very important.

Initial appointment will be for 5 years. Salary in range £8,310-£11,815 per annum plus £1,186 London Allowance according to qualifications and experience.

Further particulars and application forms are available from the Personnel Secretary (01-589 5111 ext 2003), Imperial College, London SW7 2AZ. Closing date for receipt of applications – Friday, January 6, 1984. (6928)

UNIVERSITY OF CAMBRIDGE

COMPUTING SERVICE MICROPROCESSOR APPLICATIONS

There are two vacancies in the University Computing Service to provide assistance to University departments in the application microprocessors.

Applicants should have a degree or equivalent qualification and programming experience preferably in a university environment. Hardware experience is highly desirable for one of the positions and of advantage for the other. Appointments will be to Computer Officerships on a salary range from £5,745 to £10,710 (USS).

Application forms may be obtained by writing to Miss J. A. Salley, Acting Director of the Computing Service, Computer Laboratory, Corn Exchange Street, Cambridge CB2 3QG. The closing date for applications is 9th January, 1984. (6930)

UNIVERSITY OF CAMBRIDGE
COMPUTING SERVICE

The Cambridge University Computing Service provides a range of services to the University and to many other academic institutions in the UK. The main facility consists of an IBM 3081D supporting a large user population with a wide range of applications. Other services include networking, microprocessor support and a hardware maintenance service. There is one vacancy for a well-qualified and experienced professional

COMPUTER ENGINEER

To join a small team involved in the design, construction and maintenance of computers and data communications equipment, both within the Computer Laboratory and in other departments of the University. The work is varied and gives excellent scope for diagnostic ingenuity.

Appointment will be to a Computer Officership in Grade III or Grade IV on salary scales between £5,745 to £10,710 (plus USS benefits).

Further particulars may be obtained from the Acting Director of the University Computing Service, Computer Laboratory, Corn Exchange Street, Cambridge, CB2 3QG. The closing date for applications is 13th January, 1984. (6931)

Bristol Polytechnic

Computer Studies and Mathematics Department

PRINCIPAL LECTURER IN INFORMATION SYSTEMS

Ref: No. L/158

Applications are invited from good honours degree graduates, preferably with industrial experience and a relevant higher degree, for a Principal Lectureship in Information Systems, with possible future election to a Readership.

The successful candidate will contribute to research and curriculum development, and to the teaching of Information Systems, both theory and practice. Information Systems is a major subject within the Department's research programme and in the degree and sub-degree teaching programme. It also features heavily in serviced courses, particularly in the Faculty of Accounting, Business and Management. Information Systems also features in a major Bristol Polytechnic Open Tech contract involving Plessey Marine. Candidates should have an understanding of behaviour in organisations, in addition to computing, as a basis for the construction of suitable models of user systems.

Salary scale: £12,519-£13,939 (bar) £15,744 per annum.

For further details and an application form, to be returned by 9th January, 1984, please contact the Personnel Office, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol or ring Bristol 656261, ext. 216 or 217.

Please quote Reference Number L/158 in all communications.

(6895)

SCOTTISH HEALTH SERVICE
COMMON SERVICES AGENCY
COMPUTER CENTRE

SENIOR PROGRAMMER (SOFTWARE)

The CSA Computer Centre runs an ICL 2966 under VME 2900 for TP and Batch applications. It also supports a growing number of micro computers using CP/M and Unix. A vacancy has arisen for the above post in the Technical Support Section.

Candidates must have good working knowledge of VME 2900 preferably gained in a Technical Support Team. Knowledge of an application language, e.g. COBOL or FORTRAN, is desirable.

Salary Scale £8367-£10277 per annum. (A. & C Scale 9).

Further information and application forms can be obtained from the Appointments Section, Common Services Agency, Trinity Park House, South Trinity Road, Edinburgh EH5 3SE. Completed application form should be returned no later than 22 December 1983. Please quote reference number U8G/CW.

(6949)

UNIVERSITY OF ABERDEEN
DEPARTMENT OF BIO-MEDICAL PHYSICS AND BIO-ENGINEERING

COMPUTER OFFICER

required for the supervision and enhancement of systems used for clinical imaging and multi-disciplinary research/teaching. A 32-bit computer will be installed for advanced imaging research with networking to existing systems.

A formal qualification in computing and/or substantial relevant experience desirable.

Salary within the Grade IA Scale for Other Related Staff (£7,190-£11,610 per annum), with appropriate placing.

Further particulars and application forms from The Secretary, The University, Aberdeen, with whom applications (two copies) should be lodged by 12th January, 1984.

(6898)

PUBLIC HEALTH LABORATORY SERVICE BOARD

COMPUTER OPERATIONS CONTROLLER

Scale 9. Salary Scale £8990 to £10900 inclusive of London Weighting

required at the Headquarters of the Public Health Laboratory Service in Colindale, London. You will be responsible for the management of computer operations at Colindale and actively involved in the detailed planning and implementation of the re-siting of existing equipment in a new building scheduled for completion at the end of 1984. Some travel to provide assistance and advice to other PHLS laboratories distributed throughout England and Wales will be required.

Two years' experience in a supervisory role and knowledge of on-line systems and data communications are essential and knowledge of CTL mini computers would be advantageous.

As a senior member of a small team a high degree of personal enthusiasm and commitment is essential.

Application forms, job description and further particulars are available from the Personnel Officer, Public Health Laboratory Service Board, 61 Colindale Avenue, London NW9 5EQ, tel: 01-200 1295 ext. 40.

Closing date: 6 January, 1984. (6971)

The POLYTECHNIC WOLVERHAMPTON

LECTURER II/SENIOR LECTURER IN COMPUTING

The Polytechnic is fully committed to an expansion in the teaching of computing and has now created a number of "new blood" posts for people with relevant research and industrial experience who wish to apply their skills to the benefit of students' specialist computing courses at degree and diploma level.

Particular expertise in one or more of the following areas is desirable: Computer Graphics, Expert Systems, Knowledge-Based Systems, Computer Architecture/Operating Systems and the Man-Machine Interface.

Salary scale: Lecturer II — £7215-£11568
Senior Lecturer — £10683-£13443

Details and application form from Establishment Clerk, The Polytechnic, Wolverhampton WV1 1SB or Telephone: Wolverhampton (0902) 710654 (Ansaphone).

(6914)

UNIVERSITY OF NOTTINGHAM
CRIPPS COMPUTING CENTRE

APPLICATIONS PROGRAMMER

Applications are invited for the above post within the Computing Centre.

The Centre operates an ICL 2977 and 2976 under VME/B, together with a VAX 11/780 and attached array processor. Wide and local area networks exist, providing links throughout the campus, as well as to the national computing facilities at Manchester, the Midlands Universities Network and PSS.

The successful candidate will be working in the general areas of applications software development, user training and software advisory services. Candidates should have good programming experience in a number of programming languages (preferably from within the group of Fortran, Pascal and Algol 68). A good knowledge of engineering software development would be an advantage.

Applicants should normally have a good honours degree or equivalent experience.

Starting salary will be in the range £5,310-£6,050 (IB) or £6,060-[illegible] (IA) per annum, according to level of [illegible].

Application forms and further [illegible] [illegible] 1984, may be obtained from the [illegible] Officer, University [illegible] University Park, Nottingham [illegible]. Please quote Ref. No. [illegible].

STAFFORDSHIRE EDUCATION COMMITTEE
STAFFORD COLLEGE OF FURTHER EDUCATION

Lecturer Grade I in Computing

£5,649 to £9,735 per annum

Application forms and further particulars for the above 2 posts are available from the Chief Administrative Officer, Stafford College of Further Education, Earl Street, Stafford ST16 2QR.

[illegible]

ST. THOMAS' HOSPITAL
LONDON SE1 7EH

SHARPEY-SCHAFTER CENTRE

COMPUTING IN PATHOLOGY LABORATORIES

Applications are invited for two posts of Programmer/Analyst in the Department of Computing Science. Candidates should hold a degree or equivalent qualification and have experience in FORTRAN and Assembly Language programming.

Successful candidates will initially join a small and highly active team working on the production of an integrated, portable computing system for use in pathology laboratories. They will be responsible for designing, writing and documenting programs for the capture of laboratory results and the production of clinical reports.

Salary on a scale rising to £10,087, including London Allowance. An additional ADP Allowance of £277 or £554 may be paid for appropriate experience.

Application forms and further details are available from the Personnel Department, St. Thomas' Hospital, 01-928 9292, ext. 2522.

For an informal discussion, please ring Neil Bone on 01-928 9292, Extension 2117.

Closing date for completed applications: 21 December 1983.

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If you have at least 12 months experience in the sale of micro computers in a new business environment, please telephone the Advising Consultants for an informal and totally confidential discussion on 061-236 1157 during business hours. Evenings and Weekends until 9.00 p.m. telephone Peter Rayner on 061-798 7843 or Jeff Walton on 061-962 0002.

INTERFACE
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Include contributory pension scheme, free life insurance, a staff discount scheme and relocation will be paid where appropriate.

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For further details, contact Tony Roberts on (0270) 627206 daytime or (0270) 624058 evenings and weekends, or write to him at the address below.

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ICL O+M ANALYSTS
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ICL TECHNICAL AUTHORS
ICL VME/B TECHNICAL SUPPORT PROGRAMMERS
ICL IDMS TPMS COBOL DATADICTIONARY (JAN/FEB START: NORTHERN) PROGRAMMERS

IBM

IBM MVS COBOL IMS DB/DC ANALYST/PROGRAMMERS
IBM DOS COBOL BASIC CICS DL/1 PROGRAMMERS
IBM SYSTEM 38 MAAPICS ANALYST/PROGRAMMERS
IBM MVS COBOL VSAM TSO BPL SPF PROGRAMMERS
IBM 4331 ASSEMBLER PL/1 (JAN START) PROGRAMMERS
IBM SYSTEM 38 RPG3 ANALYST/PROGRAMMERS
IBM MVS PL/1 ASSEMBLER PROGRAMMERS
IBM MVS PL/1 CICS PROGRAMMERS
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IBM MVS PL/1 SYSTEMS DESIGNERS
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In addition to the above requirements, we anticipate in the ensuing weeks that there will be many more. Therefore if you want to be considered for a Northern contract, register with us now.

Ask for Eddie Lestrade. Tel: 0442 40761

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Gulf Air has, for two consecutive years, been voted the "First Choice" airline to the Middle East. Their Management Services Department, based in Bahrain, now requires additional staff to enhance the computing services which are based on dual 4341's and support a variety of real-time applications, including the CPARS reservations system.

SYSTEMS PROGRAMMING CONTROLLER

To be responsible for the supervision of the Technical Programming Group; to support the operating systems, utilities, database and communications software. Also to be responsible for the efficient hardware and software utilisation and tuning; and for advising on future strategy and resource planning. A minimum of eight years' IBM experience, two of which must have been at supervisory or management level, is required.

SENIOR SYSTEMS PROGRAMMERS

To be responsible for supporting all the systems software and applications software developments. In-depth experience in one or more of the following is essential:

- Operating Systems Software: VM/CMS, DOS/VSE, CICS
- Database Software: Ideally ADABAS, but alternative database experience will be considered.
- Communications software: airline reservations systems and associated systems utilities and tools.

RESERVATIONS SYSTEMS COORDINATOR

To play an active role in the development and implementation of advanced passenger services systems. The successful candidate will have at least five years' airline experience and a knowledge of either IPARS, or USAF systems. An in-depth understanding of reservations systems and procedures is also required.

All these positions offer an attractive tax free salary, free accommodation, 42 days' paid annual leave, concessionary airline travel and other excellent benefits.

INTERVIEWS WILL BE HELD IN LONDON DURING DECEMBER

For further information, please contact Jenny Dalrymple-Hay or Ian Murray West on 01-493 2947, from 8am to 10pm Monday to Friday, or weekends Roger Allington, 044284 3536, quoting REF. 5034.

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(6928)

THE COMMISSION OF THE EUROPEAN COMMUNITIES

wishes to establish a reserve list for the recruitment of

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(M/F) for the following specialist areas of information technology and in particular for the ESPRIT project

a) Advanced microelectronics;
b) Software technology;
c) Advanced information processing;
d) Automated office systoms;
e) Computerized integrated production;
f) Telecommunications.

The posts to be filled are as follows:

I. Section heads (senior specialists) (ref. 9PT/I)

Duties:
to direct a team of scientific staff; to conduct high-level negotiations with industry and national authorities; to manage and coordinate research contracts.

II. Project leaders (ref. 9PT/II)

Duties:
to select, monitor, manage and evaluate research projects under the authority of a section head.

III. Study managers (ref. 9PT/III)

Duties:
to manage study programmes; to analyse the results; to work out European strategies for information technology; to liaise with the relevant bodies.

IV. Technicians (ref. 9PT/IV)

Duties:
to follow-up and analyse technical reports; to assist project leaders in implementing programmes.

The Commission is also seeking:

V. Scientific staff

for the following areas (ref. 9PT/V)
a) The computer language ADA and software technology;
b) Standardization in the data-processing and telecommunications fields;
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SALES BIT

Quality of Management – 76

Profit-based commission is unfair

ON several occasions I have been asked my opinion on sales commission schemes which are based on profit margin as opposed to revenue. Without hesitation I have always recommended against such an approach, for I believe it to be completely unfair in the normal selling situation where the salesman has no authority to modify the selling price.

Even where the salesman is authorised to give discounts, it is always within parameters dictated by the company (he cannot, for instance, deliberately sell at a loss). So the control of the selling price and, consequently, the minimum profit margin, is still under the control of the company, not the salesman.

The primary role of the salesman is to satisfy the needs of the customer and close the sale. He has no responsibility for production, raw materials, labour, delivery and other costs. He has no control over costing, price fixing, total cost of sales and marketing. Yet these are the integral components from which profit is ultimately calculated.

Why, therefore, should it be considered reasonable for the salesman to have his income based on a factor largely out of his control?

There is one rather obvious reason – frugality and lack of commitment to the salesman on behalf of the employer.

Profit-based commission schemes may be put forward as "an incentive for the salesman to pursue truly profitable business". However they are, in my mind, usually due to the company minimising its risk of paying out commission on business that is already less profitable than it would like, or can afford.

This in turn is often due to inadequacies and problems within the organisation that are introduced long before the product reaches the salesman.

Another facet of profit-based commission is the implicit suggestion that every salesman knows better than the company the price that should be charged for the product in every selling situation.

That's got to be a joke. If you took away from the computer industry every salesman whose instinctive inclination was to provide the best product at the cheapest price, there wouldn't be enough left to crowd a telephone box.

Okay, that is somewhat overstated, but salesmen are renowned for their false belief that price is the most important factor in closing the sale.

Having said all that, I must add that preoccupation with revenue does little for the salesman's appreciation of profitability. Neither does it assist his understanding of the total company operation.

I am continually surprised at the total lack of business understanding that resides within most salespeople, particularly when it comes to that basic reality – money!

By money, I don't mean the money salespeople are paid. I have never met a salesman who did not have total recall when it comes to relating the facts that constitute what goes into his pocket. I mean the money on which a company operates, its operational lifeblood.

It seems that for many salespeople the events that occur before the product is delivered to the client and after he is paid his commission, are a mystery that neither purveys challenge, nor generates curiosity.

I recall a situation in the service bureau industry when things were pretty tough and we were beginning to wonder where the money was coming from to pay our suppliers and employees.

I was busy exhorting my sales team to make more calls and close harder and all that good stuff. We had managed to generate a reasonable prospect portfolio, but we didn't seem to be able to get as many decisions as we would like.

Of course, some salespeople were more successful than others, and I was obliged to put some pressure, as well as give more support, to those who were not doing so well.

One day, a salesman came in to give me the news that he had the go-ahead for the first stage of a project from a major prospect which we had been pursuing for some time. The requirement was large, as was the potential revenue. It was a very big deal.

I congratulated him heartily; and that evening we had a drink together. "Well", he said, "I guess that solves our financial problems!" I agreed, before I had really thought about it.

After studying the bottom of my beer glass for a few moments, I found myself saying: "Actually, it doesn't help at all."

He was taken aback and I could tell from the look on his face that he was expecting a revelation on pending bankruptcy. I felt obliged to explain.

To go through what I said in detail could be summed up by the following notional table:

	Cumulative weeks
Feasibility study	2
System design	5
Program specification	7
Program writing and testing	15
Implementation	16
Parallel running	17
Acceptance of system	17
Despatch of invoice	17
Typical credit taken	29

In other words, over six months would elapse before getting the order and money actually being paid into our bank account. There are such things as deposits and staged payments, but the payment that contains the profit is the final one, and that is the one the end-user makes when he has totally run out of excuses for not doing so.

It is an essential part of the sales manager's duty to make his salespeople aware of the financial realities of company cashflow and emphasise individual responsibility for ensuring that accounts are settled at the earliest possible opportunity.

Indeed, company survival may ultimately depend on it.

Alan Williams

> I am continually surprised at the total lack of business understanding that resides within most salespeople, particularly when it comes to that basic reality – money

PUZZLE ANSWER

FROM the nature of the four-equation set, it can be deduced that aa^2, bb^2, cc^2 and dd^2 must all be divisible by 3. This helps a lot in finding the solution, which is: (1) = 9, (2) = 198, (3) = 369 and (4) = 522. The four squares are: 24^2, 27^2, 30^2 and 33^2.

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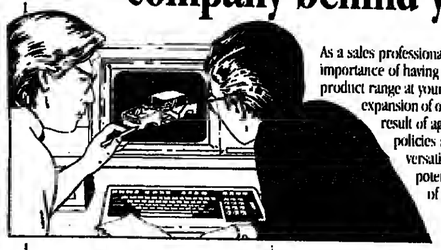

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Plea for printout as court evidence

by George Black

THE government is being urged *not to treat computer evidence in court as a special case* in the Police and Criminal Evidence Bill.

Home Office plans for a special clause defining the circumstances in which computer printout can be accepted have met a chorus of disapproval from leading academics and industry experts.

They say computer evidence should be treated as no different from any other form of evidence, and that the attempt to regulate it separately could exclude valid documents.

KELMAN . . . Fears of "trial by computer".

The much-criticised decision in the controversial Pettigrew case – in which bank listings produced by computer were ruled out of order – has stirred the experts to press the government for a clearer law. But now they are worried they may get a heavier response than they were calling for.

The Home Office says it will recommend changes to the Bill, which is now early in the committee stage in the Commons. It has sought advice from several academics and interested associations.

But Professor John Smith of Nottingham University said he was afraid that a special clause would only complicate matters. Some evidence which would normally be unacceptable as hearsay might become acceptable merely by being processed by a computer, he said. He has written to the *Criminal Law Review* arguing for minimal legislation.

And Professor Colin Tapper of Oxford University has told the Home Office they should eliminate the clause on computer evidence altogether, leaving it to be treated like any document whose author could not be present in court.

"The present provision is dreadful, as it will exclude some quite valid evidence," he said. He feared the Home Office's intended amendment would not improve things.

Nicholas Bellard, the UK representative on a Council of Europe legal committee, said lawyers might use such a clause as a technical get-out. For example, the requirement in the Bill that the computer must be in regular use was quite unnecessary, he said.

And chairman of the Association of Professional Computer Consultants William Jacot said: "The attempt to make computers a special category has not helped the case."

But Alistair Kelman, a barrister specialising in new technology, feared that loose drafting could lead to "trial by computer".

"We can't have a situation in which computer evidence is automatically admissible, and lawyers have no agreed procedure for testing machine reliability," he said.

He spoke of a general apathy in the legal profession towards what he saw as an urgent issue.

BAKER . . . Go-ahead comes four months behind schedule.

Tenders soon for teletex experiment

by Donald Kennett

TENDERS are to be invited soon for the Department of Trade and Industry-backed Project Hermes teletex experiment.

The government wants to promote teletex for electronic mail and document ordering and delivery.

Information Technology Minister Kenneth Baker gave the go-ahead last week, four months behind the schedule proposed in the planning study submitted by Scicon in June. He said: "Hermes will encourage industry to create new business activities in the information sector."

A DoTI spokesman said the delay was because of the time it had taken to consult users. The Department was now pressing ahead as fast as it could go. More than 100 companies had said they were interested in taking part.

Letters are to go out in the next few days to all who have shown an interest in managing the project and this will be followed by formal invitations to tender. Any other companies interested should contact the DoTI.

Teletex has been slow to take off, partly because it has been launched by telecommunications authorities in competition with their own existing telex services, and it has been criticised for being too limited.

Logica chairman Philip Hughes said at a conference last week: "Frankly, it's over-engineered and it does word processing badly. It communicates well, but it's too expensive and too terminal-oriented. If it had taken a software approach, it could have taken off better."

It has also been said to be vulnerable to competition from IBM's Document Content Architecture and Document Interchange Architecture (DCA and DIA) standards.

Teletex has been in use in Scandinavia and West Germany for two years, but only last week made its UK debut with the first public commercial transmission.

Inmos and Intel sign dynamic RAM deal

by Dave Madden

INMOS, the government-funded semiconductor manufacturer, has made an informal agreement with Intel to develop dynamic RAMs to common functional specifications.

Although the deal is couched in the vaguest terms, both companies insist that it does not represent a traditional second sourcing agreement. An Intel spokesman said: "There is no transfer of manufacturing – as strictly defined this is not second sourcing".

Inmos will not be manufacturing parts for Intel, but an Inmos spokesman said: "The agreement gives us both effective second source."

Inmos will use its own design and process technology, developed for the transputer, to build CMOS parts that will be functionally compatible with Intel's new CMOS 64K dynamic RAM, and planned 256K part.

What the companies do not agree on is whose spec will be followed. Intel said: "There is no technological contribution from Inmos, which has been our spec and will produce a compatible part".

But a spokesman for Inmos claimed: "We were both well down the road, and there were lots of points of similarity. We haven't merely copied their spec".

The announcement comes at a critical moment for Inmos. The government is dressing up the company to lay before the City and potential US investors, and the reflected glory of having its name associated with Intel can do it no harm.

US official calls for cut in embargo on high tech exports to Russia

by George Black

A SENIOR US governmental official has criticised the West's embargo on certain high technology shipments to Russia as too restrictive.

Commerce Secretary Malcolm Baldridge said in a television interview that the list, devised by NATO's co-ordinating committee (Cocom) for the control of strategic commodities exports, should be cut by up to 60%.

His remarks are being interpreted as the strongest reply yet by the US Commerce Department to the Pentagon campaign for tougher restrictions on trade in computers and electronics.

Baldridge was speaking during a live satellite interview on the US Information Agency's programme Euronet, broadcast on November 30.

He was asked if he was happy with the situation that had developed since the question of trade limitations was raised at the Ottawa and Williamsburg summits.

Baldridge said there was an awareness both in the US and in Europe that Cocom had become unwieldy.

"We have thousands of items in there," he said. "Time and the state of the art have passed by a good many of them. As a very broad estimate I would say we'd be much better off if we could take 50% or 60% of the items on Cocom now and just take them right off the list and do a better job on concentrating on the top third of the list that is the most sensitive.

"It would be much easier to control, much easier to get agreement on and certainly would be done more expeditiously."

Cocom is only one of the current battlefields between the two arms of the administration, Commerce and Defence were also still locked in combat over the new US Export Administration Act when Congress adjourned until the New Year.

President Reagan has emergency powers to control exports from the US following the expiry of the previous Act in the autumn.

A House of Representatives proposal for a new law is being fought by the Customs service which argues that it would underfund ventures like Operation Exodus – a clampdown project which has led to 2,000 shipments being intercepted and over 200 convictions. The most recent involves boxes of computer equipment bound for Russia that has been stopped at Swedish Customs.

The Customs has issued a set of tips to its agents, one of which is to watch for shipments through Canada to non-Canadian end-users.

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Voices and alarms

■ From front page

substantial resources behind them, but they should form consortia to draw smaller firms in, he said (see page 3).

The pilot studies are to be completed in six months at a cost of £50,000 to £100,000 each.

Clarke said four or five of about 10 pilots to be undertaken would be chosen next year to get the go-ahead for implementation. The demonstrators will cost £4 million to £8 million each to complete over five years and are hoped to generate an initial £100 million each of new business.

ICL, partnered by Logica, is investigating the introduction of artificial intelligence into DHSS local offices. GEC, with Edinburgh University and the National Engineering Laboratory, is launching a factory automation plan.

Racal is researching portable information terminals, in a scheme that involves SPL, BL Technology, Loughborough University and the Transport and Road Research Laboratory. Marconi Avionics is studying underwater systems for the oil and gas industries.

ICL doubles its profit

■ From front page

for DRS office systems had doubled last year.

Laidlaw said ICL was shipping 1,000 PCs a month, and that mainframe sales had been up 10% last year.

Wilmot defended the early announcement of the DM1 machine: "We've got people investing in distributed machines, knowing that DM1 will be compatible."

ICL had "some growth" in the American markets, which brought in £19.8 million. "Over the last two years we have made significant changes in our approach to the US marketplace," said Wilmot. "We are now targetting two areas, DRS and retail systems."

ICL finance director Robin Biggam said that for the first time in three years there was real growth overseas particularly in South Africa, Sweden, Netherlands and Germany.

Marketing director Peter Bonfield said ICL aimed at getting 60% of its business outside the UK in the long term. At present about 40% of its turnover comes from abroad.

■ Analysis of ICL results – page 8.

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Plea for printout as court evidence

by George Black

THE government is being urged not to treat computer evidence in court as a special case in the Police and Criminal Evidence Bill.

Home Office plans for a special clause defining the circumstances in which computer printout can be accepted have met a chorus of disapproval from leading academics and industry experts.

They say computer evidence should be treated as no different from any other form of evidence, and that the attempt to regulate it separately could exclude valid documents.

KELMAN . . . Fears of "trial by computer".

The much-criticised decision in the controversial Pettigrew case – in which bank listings produced by computer were ruled out of order – has stirred the experts to press the government for a clearer law. But now they are worried they may get a heavier response than they were calling for.

The Home Office says it will recommend changes to the Bill, which is now early in the committee stage in the Commons. It has sought advice from several academies and interested associations.

But Professor John Smith of Nottingham University said he was afraid that a special clause would only complicate matters. Some evidence which would normally be unacceptable as hearsay might become acceptable merely by being processed by a computer, he said. He has written to the *Criminal Law Review* arguing for minimal legislation.

And Professor Colin Tapper of Oxford University has told the Home Office they should eliminate the clause on computer evidence altogether, leaving it to be treated like any document whose author could not be present in court.

"The present provision is dreadful, as it will exclude some quite valid evidence," he said. He feared the Home Office's intended amendment would not improve things.

Nicholas Bellard, the UK representative on a Council of Europe legal committee, said lawyers might use such a clause as a technical get-out. For example, the requirement in the Bill that the computer must be in regular use was quite unnecessary, he said.

And chairman of the Association of Professional Computer Consultants William Jacot said: "The attempt to make computers a special category has not helped the case."

But Alistair Kelman, a barrister specialising in new technology, feared that loose drafting could lead to "trial by computer".

"We can't have a situation in which computer evidence is automatically admissible, and lawyers have no agreed procedure for testing machine reliability," he said.

He spoke of a general apathy in the legal profession towards what he saw as an urgent issue.

US official calls for cut in embargo on high tech exports to Russia

by George Black

A SENIOR US governmental official has criticised the West's embargo on certain high technology shipments to Russia as too restrictive.

Commerce Secretary Malcolm Baldridge said in a television interview that the list, devised by NATO's co-ordinating committee (Cocom) for the control of strategic commodities exports, should be cut by up to 60%.

His remarks are being interpreted as the strongest reply yet by the US Commerce Department to the Pentagon campaign for tougher restrictions on trade in computers and electronics.

Baldridge was speaking during a live satellite interview on the US Information Agency's programme Euronet, broadcast on November 30.

He was asked if he was happy with the situation that had developed since the question of trade limitations was raised at the Ottawa and Williamsburg summits.

Baldridge said there was an awareness both in the US and in Europe that Cocom had become unwieldy.

"We have thousands of items in there," he said. "Time and the state of the art have passed by a good many of them. As a very broad estimate I would say we'd be much better off if we could take 50% or 60% of the items on Cocom now and just take them right off the list and do a better job on concentrating on the top third of the list that is the most sensitive.

"It would be much easier to control, much easier to get agreement on and certainly would be done more expeditiously."

Cocom is only one of the current battlefields between the two arms of the administration. Commerce and Defence were also still locked in combat over the new US Export Administration Act when Congress adjourned until the New Year.

President Reagan has emergency powers to control exports from the US following the expiry of the previous Act in the autumn.

A House of Representatives proposal for a new law is being fought by the Customs service which argues that it would underfund ventures like Operation Exodus – a clampdown project which has led to 2,000 shipments being intercepted and over 200 convictions. The most recent involves boxes of computer equipment bound for Russia that has been stopped at Swedish Customs.

The Customs has issued a set of tips to its agents, one of which is to watch for shipments through Canada to non-Canadian end-users.

BAKER . . . *Go-ahead comes four months behind schedule.*

Tenders soon for teletex experiment

by Donald Kennett

TENDERS are to be invited soon for the Department of Trade and Industry-backed Project Hermes teletex experiment.

The government wants to promote teletex for electronic mail and document ordering and delivery.

Information Technology Minister Kenneth Baker gave the go-ahead last week, four months behind the schedule proposed in the planning study submitted by Scicon in June. He said: "Hermes will encourage industry to create new business activities in the information sector."

A DoTI spokesman said the delay was because of the time it had taken to consult users. The Department was now pressing ahead as fast as it could go. More than 100 companies had said they were interested in taking part.

Letters are to go out in the next few days to all who have shown an interest in managing the project and this will be followed by formal invitations to tender. Any other companies interested should contact the DoTI.

Teletex has been slow to take off, partly because it has been launched by telecommunications authorities in competition with their own existing telex services, and it has been criticised for being too limited.

Logica chairman Philip Hughes said at a conference last week: "Frankly, it's over-engineered and it does word processing badly. It communicates well, but it's too expensive and too terminal-oriented. If it had taken a software approach, it could have taken off better."

It has also been said to be vulnerable to competition from IBM's Document Content Architecture and Document Interchange Architecture (DCA and DIA) standards.

Teletex has been in use in Scandinavia and West Germany for two years, but only last week made its UK debut with the first public commercial transmission.

Inmos and Intel sign dynamic RAM deal

by Dave Madden

INMOS, the government-funded semiconductor manufacturer, has made an informal agreement with Intel to develop dynamic RAMs to common functional specifications.

Although the deal is couched in the vaguest terms, both companies insist that it does not represent a traditional second sourcing agreement. An Intel spokesman said: "There is no transfer of manufacturing – as strictly defined this is not second sourcing".

Inmos will not be manufacturing parts for Intel, but an Inmos spokesman said: "The agreement gives us both effective second source."

Inmos will use its own design and process technology, developed for the transputer, to build CMOS parts that will be functionally compatible with Intel's new CMOS 64K dynamic RAM, and planned 256K part.

What the companies do not agree on is whose spec will be followed. Intel said: "There is no technological contribution from Inmos, which has seen our spec and will produce a compatible part".

But a spokesman for Inmos claimed: "We were both well down the road, and there were lots of points of similarity. We haven't merely copied their spec".

The announcement comes at a critical moment for Inmos. The government is dressing up the company to lay before the City and potential US investors, and the reflected glory of having its name associated with Intel can do it no harm.

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Voices and alarms

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substantial resources behind them, but they should form consortia to draw smaller firms in, he said (see page 3).

The pilot studies are to be completed in six months at a cost of £50,000 to £100,000 each.

Clarke said four or five of about 10 pilots to be undertaken would be chosen next year to get the go-ahead for implementation. The demonstrators will cost £4 million to £8 million each to complete over five years and are hoped to generate at least £100 million each of new business.

ICL, partnered by Logica, is investigating the introduction of artificial intelligence into DHSS local offices. GEC, with Edinburgh University and the National Engineering Laboratory, is launching a factory automation plan.

Racal is researching portable information terminals, in a scheme that involves SPL, BL Technology, Loughborough University and the Transport and Road Research Laboratory. Marconi Avionics is studying underwater systems for the oil and gas industries.

ICL doubles its profit

■ From front page

for DRS office systems had doubled last year.

Laidlaw said ICL was shipping 1,000 PCs a month, and that mainframe sales had been up 10% last year.

Wilmot defended the early announcement of the DM1 machine: "We've got people investing in distributed machines, knowing that DM1 will be compatible."

ICL had "some growth" in the American markets, which brought in £19.8 million. "Over the last two years we have made significant changes in our approach to the US marketplace," said Wilmot, "We are now targetting two areas, DRS and retail systems."

ICL finance director Robin Biggam said that for the first time in three years there was real growth overseas particularly in South Africa, Sweden, Netherlands and Germany.

Marketing director Peter Bonfield said ICL aimed at getting 60% of its business outside the UK in the long term. At present about 40% of its turnover comes from abroad.

■ Analysis of ICL results – page 8.

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